- Uncertainties associated with projections of correctional populations were highlighted in all of the two widely differing population projections made in Iowa, and assumptions underlying projections made in the other States reiterate our assertion that the nature of assumptions made for the criminal justice system affect the result to a greater extent than does the projection technique.

As these case studies indicate, caution should accompany nationwide generalizations concerning the prison-crowding problem. These differences among States suggest that there is no single national prison population policy strategy. It is clear, however, that many aspects of criminal justice policy-making are likely to impact on prison populations.

II. NOTES

1. Attorney General for the State of South Carolina, Annual Report. Summary of Criminal Prosecutions for the Calendar Year 1974.

2. Data from the Attorney General's Office.

3. South Carolina Department of Corrections, Division of Planning and Research, Quarterly Statistical Report: Third Quarter Fiscal Year 1977 (Columbia: May 1977).

4. South Carolina Department of Corrections, Comprehensive Growth and Capital Improvements Plan, 1976.

5. Information provided by official of State Department of Corrections.

6. South Carolina Department of Corrections, Comprehensive Growth and Capital Improvements Plan, 1976.

7. Gleaned from site interview with criminal justice officials.

8. All parole statistics cited were taken from monthly reports of the Illinois Parole and Pardon Board.

9. John Flanagan, "Tentative Population Projections Fiscal Year 77," Report to the Illinois Department of Corrections, Adult Division (September 1975).

10. Crime index and arrest statistics were taken from Criminal Justice Information Services, State Department of Law Enforcement, Illinois Uniform Crime Reports (1972-76).

11. These subsequent adjudication statistics were taken from Administrative Office of the Courts, Annual Report to the Supreme Court of Illinois (1961-1975).

12. National Council on Crime and Delinquency, Criminal Justice Newsletter, 8 (August 1, 1977).

13. Memorandum dated July 15, 1977 from Richard B. Gramby, Coordinator of Program Services, Adult Division, to Phillip Shayne, Chief of Program Services.

14. Telephone communication with a representative of the Chicago Crime Commission.

15. Administrative Office of the Courts, Annual Report to the Supreme Court of Illinois, 1974.

16. See David M. Lipman, "Mississippi's Prison Experience," Mississippi Law Review, 45(1974), 685-785.

17. See Anderson v. Nosser, 438 F. 2d 187 (5th Circuit, 1971).

18. Gates v. Collier, 349 F. Supp. 881 (N.D. Miss. 1972).

19. Summarized from Gates v. Collier, 349 F. Supp. 881 (N.D. Miss. 1972).

20. Order of the U.S. District Court for the Northern District of Mississippi, March 24, 1977, as amended on April 4, 1977, p. 4.

21. Telephone interview with Acting Warden Presley.

22. This is suggested in Mississippi Criminal Justice Planning Division, 1977 Comprehensive Plan.

23. Ibid.

24. The data that follow were obtained and verified in telephone interveiws with Department spokesmen.

25. Ibid.

26. Judicial Workload statistics are from Court Administrator, Iowa Judicial Department, Annual Report, 1972-1976.

27. Parole statistics are from: Iowa Board of Paroles, Biennial Reports, 1968-1976.

28. Advisory Commission on Corrections Relief, Report to the 67th General Assembly of Iowa, Adult Corrections in Iowa (March 1977).

29. For an early assessment of the legislation, see "Proposed Criminal Law Reform in Iowa: A Symposium--Student Commentary on Proposed Criminal Law Reform in Iowa--Judgement and Sentencing Procedures," 60 Iowa Law Review, 598.

30. Advisory Commission on Corrections Relief, op. cit.

III. CAPACITY OF CORRECTIONAL INSTITUTIONS

This section describes both present conditions in State and Federal correctional institutions in the United States and plans for these corrections systems through 1982. The data described and analyzed were obtained from surveying corrections agencies of the 50 States, the District of Columbia, and the Federal Bureau of Prisons. The instruments used to collect the data and a detailed description of the survey method appear in the Technical Appendix.

Two data collection instruments* were used in our survey of State correctional institutions and Federal institutions. The first (PC-1) sought data at the State level, including among other items used for the population projects, capacity on December 31 for the years 1970 through 1976 and on June 30, 1977. The second form (PC-2) used the institution as the unit of response, and included among other items, population and capacity on December 31 for the years 1970 through 1976 and inmate counts by inmate security level, for those serving more than a year, on June 30, 1977.** Each institution was characterized by security level, age, size, and region.***

The survey was conducted primarily by mail, with planned extensive telephone and site follow-up where necessary. In some

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* These forms and the survey methodology are located in Volume II: Technical Appendix

** The number of prisoners with a year or less maximum sentence on December 31, 1976 was used as an estimate of the number of such prisoners on June 30, 1977.

*** Sex of inmates, security level, and age of institution were obtained from secondary sources. (For the regional breakdown of States used see Table 3.1.)

instances, the desired data item was simply not available and estimates were made from appropriate secondary sources. All 52 PC-1 forms and 569* PC-2 forms were obtained for the 50 States, the District of Columbia, and the Federal prison system, covering all correctional facilities under State authority.

The following sections provide statistical and descriptive data concerning State and Federal correctional institutions. Plans through 1982 for building, renovating, and conversion of institutions, and the costs associated with the implementation of such plans--as reported by survey respondents--are described at the conclusion of the chapter.

Distributions of Prisoner Population: An Overview

Preliminary National Prisoner Statistics (NPS) data, as displayed in Table 3.1, report that the total number of inmates held on December 31, 1976 in both Federal and State institutions was 284,177. Included were 15,635 prisoners (six percent) with a year or less and 5858 State inmates held in local jails.** Women accounted for eight percent of prisoners sentenced for less than one year and four percent of those sentenced for longer periods.

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* Since the instructions for completing the forms suggested that prerelease facilities with fewer than 100 prisoners be aggregated into two groups--State-owned and contracted prerelease facilities--this figure does not reflect the total number of institutions included in the survey. Several of the returned PC-2's contained data from facilities that had been aggregated in this way, without indicating the number of facilities so combined.

** These inmates are held in local jails because of overcrowding in State institutions and are not considered by these jurisdictions to be in the custody of the State correctional system. In addition, the number of prisoners in Maryland (1081), South Carolina (786), Massachusetts (140), and Arkansas (13) includes inmates held in local jails that are considered by these jurisdictions to be in the custody of the State correctional system. Three percent of State-sentenced prisoners on the last day of 1976 were being held in local jails because of overcrowding. An estimated 2000, usually short-term prisoners, are held in local jails under contract to the Federal government. Also, included in the Federal count is an estimated 1500 inmates in contract prerelease facilities.

Table 3.1

Total Number of Persons Held by Federal and State Authorities on December 31, 1976 by Region, State, and Sex

Region and State	Both Sexes				Male			Female		
	Total	Over One Year Sentence	Other	Inmates Held in Local Jails	Total	Over One Year Sentence	Other	Total	Over One Year Sentence	Other
United States, Total	284,177	260,684	15,635	7,858	263,745	249,338	14,407	11,074	9,846	1,228
Federal Institutions, Total[2]	30,299	26,155	3,144	3,000	25,429	23,395	2,034	1,370	1,260	110
State Institutions, Total	253,878	234,529	13,491	5,858	238,316	225,943	12,373	9,704	8,586	1,118
Northeast										
Maine	615	610	5	0	605	600	5	10	10	0
New Hampshire[3]	254	248	6	0	254	248	6	0	0	0
Vermont	460	307	153	-4	450	301	149	10	6	4
Massachusetts	3,695	3,651	44	0	3,583	3,573	10	112	78	34
Rhode Island	652	490	162	-4	639	481	158	13	9	4
Connecticut	3,239	1,923	1,316	-4	3,114	1,874	1,240	125	49	76
New York	17,707	17,700	7	0	17,235	17,228	7	472	472	0
New Jersey	6,204	5,685	319	200	5,789	5,470	319	215	215	0
Pennsylvania	7,590	6,656	934	0	7,361	6,457	904	229	199	30
North Central										
Ohio	12,525	12,525	0	0	11,983	11,983	0	542	542	0
Indiana	4,903	4,203	700	0	4,742	4,051	691	161	152	9
Illinois	9,651	9,242	409	0	9,422	9,021	401	229	221	8
Michigan	13,462	13,462	0	0	13,057	13,057	0	405	405	0
Wisconsin	3,299	3,299	0	0	3,160	3,160	0	139	139	0
Minnesota	1,624	1,624	0	0	1,561	1,561	0	63	63	0
Iowa	1,956	1,891	65	0	1,878	1,815	63	78	76	2
Missouri	4,997	4,997	0	0	4,878	4,878	0	119	119	0
North Dakota	198	162	36	0	198	162	36	0	0	0
South Dakota	524	481	43	0	502	461	41	22	20	2
Nebraska	1,474	1,438	36	0	1,371	1,353	18	103	85	18
Kansas	3,086	3,078	8	0	3,013	3,013	0	73	65	8
South										
Delaware	953	684	269	-4	910	665	245	43	19	24
Maryland[4]	7,912	7,437	475	-7	7,679	7,218	461	233	219	14
District of Columbia	3,086	2,299	787	-4	2,915	2,220	695	171	79	92
Virginia	7,480	6,140	510	790	6,421	5,956	465	269	224	45
West Virginia	1,308	1,294	14	0	1,269	1,255	14	39	39	0
North Carolina	13,257	11,570	1,687	0	12,770	11,195	1,575	487	375	112
South Carolina	6,988	6,433	555	-7	6,695	6,169	526	293	264	29
Georgia	12,211	11,134	527	550	11,162	10,689	473	499	445	54
Florida[5]	18,093	17,793	0	300	17,008	17,008	0	785	785	0
Kentucky	3,657	3,657	0	0	3,521	3,521	0	136	136	0
Tennessee	4,837	4,817	20	0	4,634	4,623	11	203	194	9
Alabama	5,193	3,032	1	2,160	2,824	2,823	1	309	309	0
Mississippi[5]	2,237	2,195	0	103	2,059	2,059	0	76	76	0
Arkansas	2,503	2,431	72	-7	2,389	2,323	66	114	108	6
Louisiana	6,367	4,591	0	1,756	4,403	4,403	0	188	188	0
Oklahoma	4,339	3,649	690	0	4,161	3,503	658	178	146	32
Texas	19,717	19,717	0	0	18,894	18,894	0	823	823	0
West										
Montana	558	551	7	0	558	551	7	0	0	0
Idaho	695	682	13	0	684	671	13	11	11	0
Wyoming	340	340	0	0	340	340	0	0	0	0
Colorado	3,244	3,239	5	0	3,167	3,162	5	77	77	0
New Mexico	1,352	1,220	132	0	1,296	1,167	129	56	53	3
Arizona	3,850	3,850	0	0	3,725	3,725	0	125	125	0
Utah	820	748	72	0	794	723	71	26	25	1
Nevada	953	953	0	0	899	899	0	54	54	0
Washington	3,893	3,881	12	0	3,684	3,672	12	209	209	0
Oregon[10]	2,859	2,859	0 0	0	2,749	2,749	0	110	110	0
California	21,088	18,113	2,975	0	19,964	17,459	2,505	1,124	654	470
Alaska[11]	494	330	264	-4	471	226	245	23	4	19
Hawaii	499	338	161	-4	476	328	148	23	10	13

[1] Includes prisoners with sentences of a year or less, as well as unsentenced persons. The latter include, among others, those held for safekeeping, those undergoing court-ordered evaluation, civil narcotics addicts, and, in states operating an integrated jail prison system, those held awaiting trial or sentencing.

[2] The distribution of the inmate population in the Federal Bureau of Prisons between prisoners with a maximum sentence of over one year and those with shorter or no sentences was estimated. Also estimated were 1500 inmates in contract pre-release facilities and 2000 inmates, usually short-term, housed in local jails under contract to the Bureau of Prisons.

[3] No females housed in New Hampshire's system. Female inmates are transferred to Maine and Connecticut.

[4] Figures include jail and prison inmates, as jails and prisons in these jurisdictions form an integrated system. For the District of Columbia, figures exclude inmates held in the D.C. jail and detention center who had a maximum sentence of a year or less or no sentence.

[5] All figures are estimates within 5 percent of actual.

[6] The distribution of the inmate population in Maryland between prisoners with a maximum sentence of over one year and those with shorter or no sentences was estimated.

[7] The figures for Maryland include 1,081 inmates, for South Carolina, 786 inmates, for Arkansas, 13 inmates held in local jails that are considered by these jurisdictions to be in the custody of the State correctional system.

[8] Less than one percent of all data includes unsentenced persons unable to be distinguished from other inmates.

[9] The distribution of the inmate population in Mississippi between prisoners with a maximum sentence of over one year and those with shorter or no sentences was estimated. There were 483 inmates held in local jails in Mississippi on July 28, 1977.

[10] Includes a small number of felons (estimated to be no more than 30) who were sentenced to terms of one year.

[11] Figures include 57 inmates with over one year maximum sentence sent to the Federal Bureau of Prisons. There were 90 inmates (88 men and 2 women) serving time in the Federal Bureau of Prisons from Alaska on August 19, 1977. All data are estimates.

Source: Preliminary unpublished data made available by the Bureau of Census.

Our own data for June 30, 1977 give a rather similar population size of 283,433.* The totals from our survey may not be as reliable as National Prisoner Statistics figures becuase the attempt to collect population data from each institution, rather than for the state as a whole, increased the probability of error in the collection and compilation of the data. Nevertheless, the data are appropriate for the assessment of the capacity of prison systems (as defined by the individual prison systems) to house prisoners.

According to Table 3.2, almost half of the prisoners confined in State correctional facilities for the last two years have been held in institutions in the South. This is a significantly larger proportion of inmates than the region's one-third share of the U.S. population. The other three regions (excluding the Federal system) all have total inmate populations below their respective shares of the national population.

Table 3.2

Percent Distribution of State Prisoner Population and U.S. Population by Region

Region	Percent of Prisoner Population 12-31-75	12-31-76	6-30-77	Percent of U.S. Population (7/1/77)
Northeast	16%	16%	15%	23%
North Central	22	22	23	27
South	47	46	46	32
West	15	15	15	18
	100% (218,619)	100% (253,878)	100% (259,557)	100% (216,817,000)

Source: PC-2 and Census data

* Includes an estimate of 8000 State prisoners held in local jails.

* This figure does not include an estimated 8000 State prisoners and 2000 Federal prisoners held in local jails. They were not included in the survey becuase there was no straightforward way of determining the capacity of jails to hold State prisoners as distinct from local inmates. The focus of the survey was a preliminary assessment of the capacity of prison systems to house prisoners, not an exact census. It should be added that the figures are believed to be within one or two percent of the actual number of State and Federal prisoners (exclusive of those held in local jails) in the United States on June 30, 1977.

Institutional and Inmate Security Classification

Much of the analysis that follows is organized by security classification because the ability of prisons to house prisoners varies dramatically across both institutional and inmate security classification.

The American Correctional Association definitions will introduce the reader to the characteristics of maximum, medium, and minimum security to prisons.[1]

> The present typical maximum security institution will in some cases be enclosed by a masonry wall from 18 to 25-feet high, but often, a double fence...will provide the needed security. The perimeter in all maximum security facilities will be adequately equipped with armed guards in well protected and strategically located towers.
>
> A large percentage of the housing will be composed of interior cell blocks, and, ideally, each cell will be occupied by one prisoner and will be equipped with plumbing and other sanitary facilities. Most of the prisons built in the United States up to the first World War were, generally, of the maximum security type. There have been few such institutions built in recent years, and it is probable that for many years to come, in most States, it will be unnecessary to build new maximum security institutions. In all States, a much larger proportion of the prison population is housed in maximum security facilities than would be necessary. It is doubtful if real maximum security facilities are needed for more than 15 percent of an unselected prison population.
>
> The medium security institution will normally have a double fenced enclosure, an inner 12 to 14-foot fence, with curb and outer 8 to 12-foot fence, 16 to 20 feet apart and both topped with barbed wire. Buildings should be kept back at least 35 feet from the inner security fence. The fence perimeter should require a minimum number of personnel to guard the fence. The housing of this institution would be largely made up of outside cells. One unit not to exceed 150 cells may be an interior cell block type of building for special cases difficult to handle in housing with outside windows. Other types of housing may include honor rooms, cubicles, squad rooms, and dormitories.

> Dormitory housing is always to be regarded as a compromise between construction costs and the ideal conditions of individual rooms or cells. About one-half of an unselected State prison population can be handled satisfactorily in medium security facilities.
>
> The minimum security institution operates without fixed armed posts. It may or may not have a fenced enclosure. In small installations in remote areas the fenced enclosure may not be necessary, but signs delineating the facility's limits should be posted with the same dual purpose as a fence, albeit not a physical barrier. In larger establishments, and in those located in rather heavily populated areas, the fence will be found desirable.
>
> The housing facilities of the minimum security institution may be composed to a large extent of dormitories. Individual cells or rooms are always preferable to dormitories, but since they are more expensive to design and construct, it has been found desirable and reasonably satisfactory to operate a minimum security facility in which about 70 percent of the housing is of the dormitory type....In passing it should be stated that dormitories are very unsatisfactory as housing in women's institutions. Traditionally, our society has provided a different standard of modesty and privacy for women.
>
> If a prison system maintains an adequate program of classification, it is possible to maintain approximately one-third of the unselected adult prison population in open or minimum security institutions and facilities.

The grade of custody usually refers to the perimeter security of the facility, but prisoners are also classified internally by level of security. One can, therefore, find minimum-security prisoners inside a maximum-or medium-security institution. Several different arrangements are possible within a facility. The American Correctional Association recommends

> Under most operating conditions an institution should provide for three or four different degrees of custody. The basic three are Close, Medium and Minimum. In most cases the fourth, or maximum custody classification, is used only for the known "escape risk" inmates or those considered incorrigible. In practice, Close Custody inmates are housed in the institution's most secure

housing units, are assigned to work within the institution enclosure, and are under constant supervision. Close custody classification is intended, not only to reduce the escape hazards, but to provide close supervision for sex deviates, abnormal, or unusually difficult types of prisoners. Medium Custody classification should normally provide that inmates be available for work on the inside without constant or direct supervision, and on the outside of the regular enclosure under supervision. This group is considered eligible for outside assignments such as farms, camps, logging operations, etc.; and usually under general or intermittent supervision.

For purposes of this report, we have narrowed the four degrees of inmate custody recommended by the American Correctional Association to three (combining "close" and "maximum" into one called maximum) using the same inmate and institutional terms for custody designations. These security classifications for both institutions and inmates are paradigms only; particular classifications may not, and most likely do not, conform to these standards. There is wide variation among States and institutions within a State in the meaning of institutional and inmate custody levels.

To illustrate the structural chacteristics of institutional custody designations and to inform the subsequent statistical overview in this chapter, brief descriptions of five institutions are presented below. Developed through site visits to the case study States, these four profiles capture the diversity of correctional facilities among States, within States, and within large complexes of a single correctional center.

Stateville Correctional Center, Illinois (Maximum Security)

Stateville Correctional Center (SCC), opened in 1925, is in Joliet, Illinois, less than an hour's drive south of Chicago. The most immediate impression a visitor receives is the size of the complex. The prison comprises four enormous round cellhouses (C, D, E, and F) and a long rectangular cell house (Cellhouse B). Fanning out from a gigantic circular central dining facility (from its northern hemisphere) and proceeding form east to west, occupying each 36 degree segment is a round cellhouse, until one comes to the last segment on the west, in which sits Cellhouse B. Each of the four round cellhouses has a ground floor and three balconies.* Each floor has 62 cells. Cellhouse F has a

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* Balconies, floors, tiers, and galleries are frequently used interchangeably. "Flag" or "flats" usually designate the ground floor.

slight variation. It contains 31 double rather than 62 single cells on its second balcony and 15 dorms and one double cell on its third balcony. All the cells are exterior cells. Rising out of the center of each roundhouse is a guard tower from which a single guard, in principle, could see the entire confined population. In practice, however, every time a guard turns to watch his wards, his back is turned on another segment of the prisoners. If the round cellhouses are a bit complex, Cellhouse B suffers from unrelieved linear simplicity. There are four balconies each with 400 interior cell units (each floor with 80 cells arranged in two back-to-back galleries of 40 each). These six immense structures (dining facility and the five cellhouses) occupy only roughly 25 percent of the land area within the Stateville Correctional Center's gun-towered high walls. Walkways connect the cellhouses with about 15 other major structures (powerhouse shops, school, laundry, chapel, etc.). These structures roughly occupy another 25 percent of the 60-acre rectangular area inside the walls, leaving half on the inside area (especially from the Administration Building to the area surrounding the cellhouses) in a manicured lawn and well-kept gardens. Built for 1392 inmates, it once housed 3952 (in 1935) and now houses 2500 inside the walls and 200 on a prison farm a mile away.

Dwight Correctional Center, Illinois (Women's, Medium Security)

The Dwight Correctional Center lies in northeastern Illinois 35 miles west of Kankakee. It was opened in 1932, and became the State Reformatory for Women. Dwight accepts both misdemeanants and felons so that inmates' sentences can run from 90 days or less to life.

A cyclone fence circles the 30-plus acre site. Detached cottages, recreational and vocational buildings form clusters. The physical facility has the feel of a campus sprawl. It is, therefore, rather surprising to see columns of women "marching" between units. The fence line, which runs over a half-mile, has a clinical building at one end and the administration building a few hundred feet short of the other end.

Vienna Correctional Center, Illinois (Minimum Security)

Vienna Correctional Center, the State's newest institution, is located at the southern tip of Illinois, nearly 400 miles from Chicago.* Vienna is a fully minimum-security institution and has no fence. Opened in 1971, the new facility appears at first

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* Some 57 percent of Vienna's inmates come from Cook County.

sight to be a suburban community. Cellblocks are neighborhoods, cells are rooms, the big yard is a town square, and there are workshops and shopping areas, a barber, gymnasium, music facility, a spacious school and library--each a separate detached facility. The living rooms all have locks, but the inmates (called residents) carry their own keys. The academic program, which includes some 30 courses (day and night), has, in addition to prisoners, some 300 townspeople who come on campus as fellow students with the residents. A nearby college furnishes the faculty.

There are no cellblocks to break out of, no walls to climb or towers to shoot from. If a prisoner leaves, the countryside is not alarmed, and escapees are called "walkaways." In the first 10 years, fewer than 30 of over 4000 residents have left illegally. Vienna has been riot-free since its opening. The prisoners operate a multi-county radio-dispatched emergency ambulance service. It has already saved lives of area residents injured in accidents in remote locations of the vast rural expanse it serves. In contrast to Stateville, 350 miles to the north, Vienna has no difficulty in recruiting and retaining staff. It has a prospective employee waiting list of 1500.

Mississippi State Penitentiary (Mixed Custody Complex)

Parchman, operating as a farm system until recently, is Mississippi's only State prison facility.* Over the years since 1906 it has grown from 2000 acres to over 21,000 acres. The core of the prison is located at Parchman in Mississippi's delta country 130 miles northwest of the State capital of Jackson. Because Parchman has been basically a farm operation, its structures until recently differed from a walled prison. Typical buildings include barns, equipment sheds, repair shops, storehouses, cotton gins and fenced dormitories. Many of the dorms forming the camp are now inoperative and decaying. At one time, each camp had a specific work purpose. With the mechanization of the cotton industry, only a small portion of inmates actually do farm work. There are no cells or partitions in most dorms. Beds are a yard apart with personal property lockers beneath them; and there is a commons area which serves as the dining hall, recreation area and meeting room. Parchman is an example of a correctional complex which houses all types of inmates in all grades of custody. It also has maximum-custody single cells for some 244 inmates.

If one matches the internal custody-level classification of prisoners with that of institutions, fewer than 50 percent of the inmates in maximum custody institutions are designated as maximum

* The prison is more fully described in Chapter II.

custody inmates. Table 3.3 summarizes the distribution of inmates by inmate security level and institution security level for the nation as a whole.

Table 3.3

Prisoner Population by Inmate and Institutional Security Level*

Inmate Security Level	Institutional Security Level			
	Maximum	Medium	Minimum	Prerelease
Maximum	86%	8%	2%	2%
Medium	2	73	43	-
Minimum	12	19	55	98
	100% (124,507)	100% (108,652)	100% (43,048)	100% (7226)

Source: PC-2
* Does not include approximately 8000 prisoners in local jails.

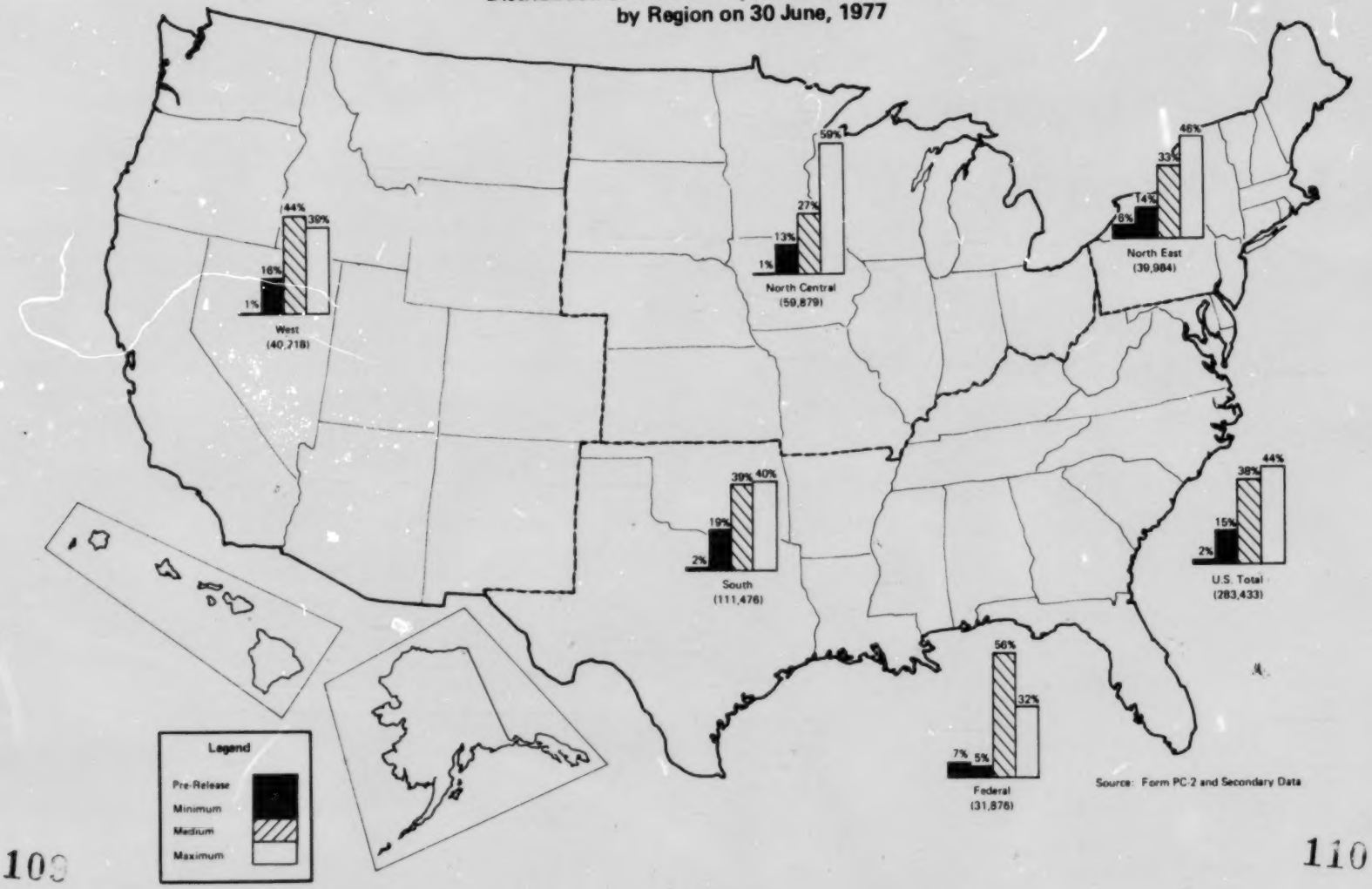
There are a number of regional differences in the proportion of prisoners in institutions of the four security levels. Figure 3.1 displays these distributions by region. There is a larger percentage of inmates in maximum custody institutions (and fewer medium custody institutions) in the North Central region than in any of the three remaining regions. The other regions have nearly matching percentages in maximum- and medium-custody housing. The Federal system represents a marked departure from the States' housing pattern. Only a third of its 31,876* inmates live in maximum custody facilities with 55 percent in medium custody and eight percent in minimum security facilities, and some seven percent in prerelease facilities.

The security-level distribution arrayed for the States appears not to suggest a patterened choice following thoughtful classification and assessment of program need. If one matches the internal, custody-level classification of prisoners with that of institutions, fewer than 50 percent of the inmates in maximum-custody

* This does not take into account an estimated 2000 prisoners held in local jails.

Figure 3.1

Distribution of Prisoners by Institutional Security Level by Region on 30 June, 1977



Source: Form PC-2 and Secondary Data

institutions are designated as maximum-custody inmates. Table 3.3 summarizes the distribution of inmates by inmate security level and institution security level for the nation as a whole.

Greater insight regarding living conditions can perhaps be gained through analysis of prisoner distributions for each security level, by ages and sizes. As can be seen from Table 3.4, 66 percent of the population lives in maximum security institutions built prior to 1925. By contrast, only 24 percent and 19 percent respectively live in medium- and minimum-security facilities built prior to that date. Table 3.5 displays the distribution of prisoners by size of institution for each security level.

Table 3.4

Distribution of Prisoners by Age of Institution by Security Level of Institution

	Institutional Security Level			
Age of Institution	Maximum	Medium	Mininum	Pre-release
Prior to 1875	29%	6%	2%	6%
1875 to 1924	37	18	17	14
1925 to present	34	75	81	82
	100% (124,507)	100% (108,652)	100% (43,048)	100% (283,433)

Table 3.5

Distribution of Prisoners by Size of Institution by Security Level of Institution

Size of Institution	Institutional Security Level				
	Maximum	Medium	Minimum	Pre-release	Total
Less than 500	9%	21%	54%	27%	22%
500-999	17	31	16	23	22
1000 and over	74	49	30	0	56
	100% (124,507)	100% (108,652)	100% (43,048)	100% (7,226)	100% (283,433)

This table shows a decline, from 74 percent of prisoners living in maximum-security institutions holding 1000 or more, to 30 percent of prisoners in minimum-security facilities of that size. Complementing this are increases in the percentage of prisoners in small institutions as security level declines.

Regional Distribution by Size and Age of Institutions

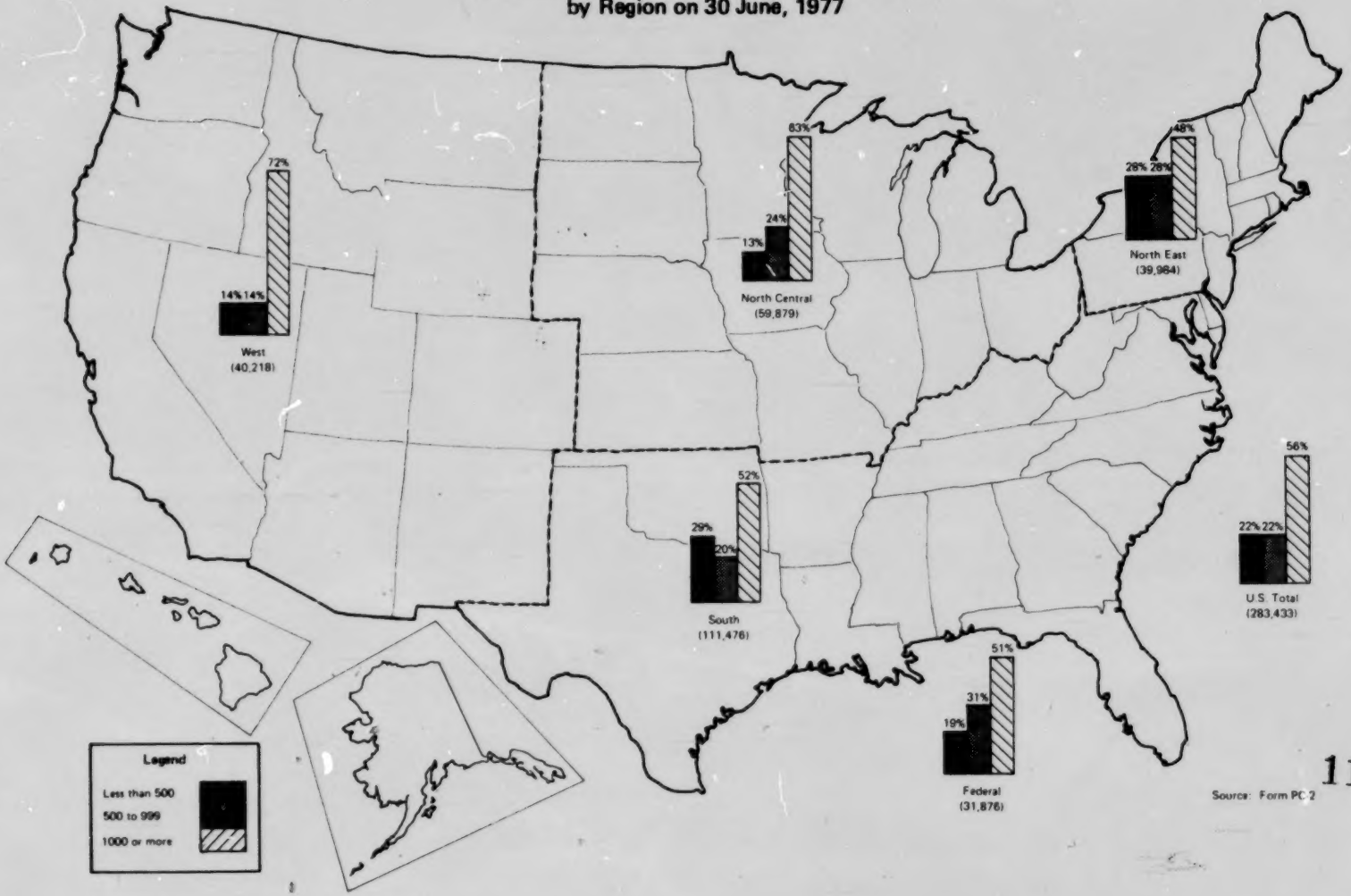
Regional differences also occur in the distribution of prisoners by size of institution. Figure 3.2 summarizes these distributions by region. The North Central and Western regions have greater percentages of prisoners in large institutions (inmate populations of at least 1000) than do the South and Northeast.

Almost 43 percent of the nation's prison population is confined in prisons over 50 years old. In examining age distribution by region, every region but the North Central confines from 39 percent to 43 percent of its prisoners in institutions more than 50 years of age; the North Central region confines nearly 60 percent in such institutions. Seventy-nine percent of the federal system's prison population are housed in the newer institutions. These findings are summarized in Figure 3.3.

The large proportion of prisoners housed in newer facilities in the South may be a result of the many converted facilities now in use such as tents and modular or trailer units. Because of their adaptability in warmer climates and their relatively low cost, these facilities offered a quick means of responding to

Figure 3.2

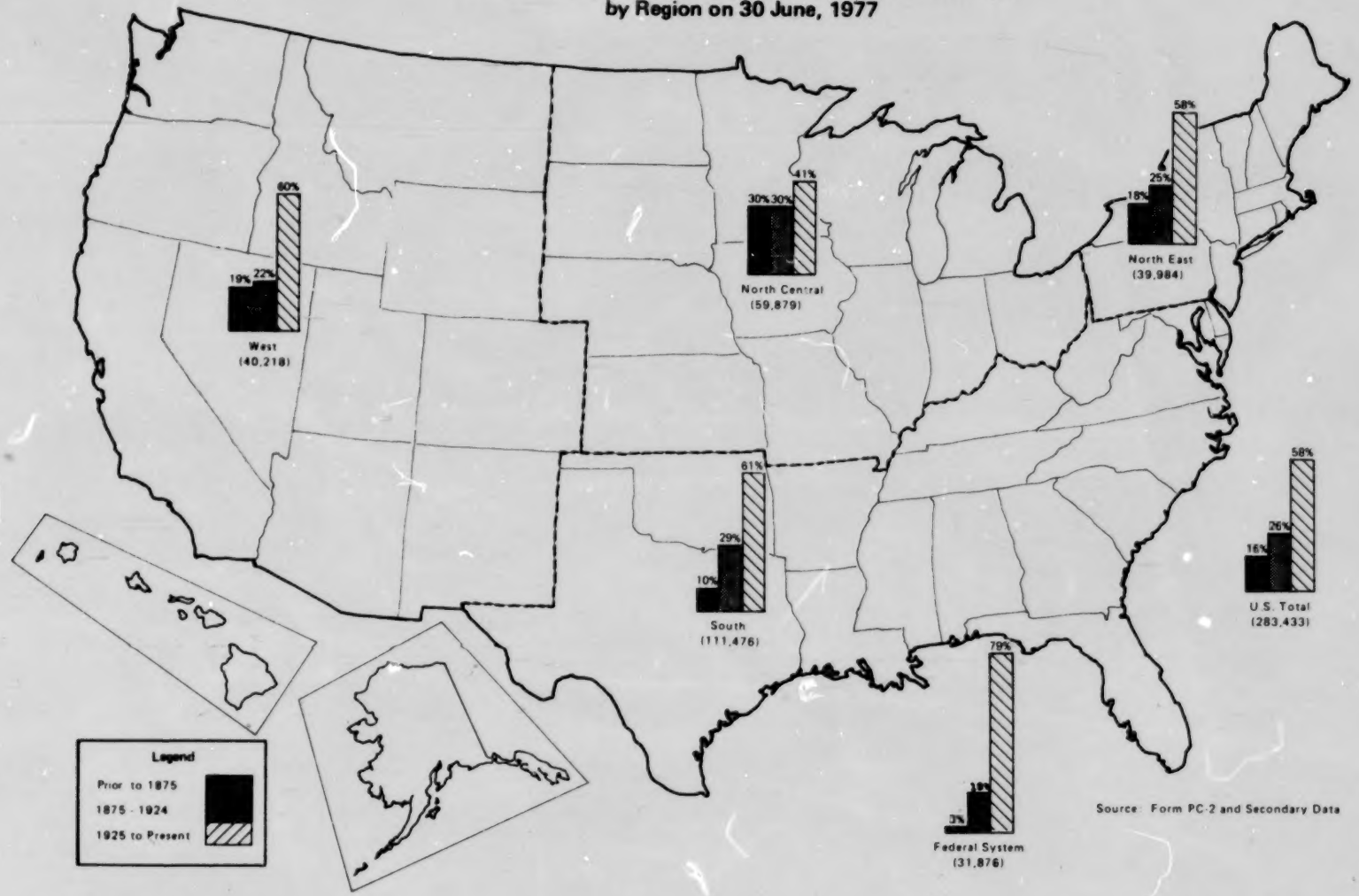
Distribution of Prisoners by Size of Institution by Region on 30 June, 1977



Source: Form PC 2

Figure 3.3

Distribution of Prisoner Population by Age of Institution by Region on 30 June, 1977



the steep rise in intake experienced in southern prison systems in recent years. This conversion program combined with a slower but concurrent permanent building program to produce the nation's heaviest percentage of inmates in younger facilities.

Life in a Cell

In order to provide more than statistical profiles of prisoners in American institutions, brief descriptions of prison life, derived from case study materials, is provided in this section.

Recall that the design of Cellhouse B in Stateville Penitentiary (described in the preceding section) is of the inside cellblock type. The typical prison of this type will have two long rows of steel cells stacked back to back, three, four, or five tiers high, sharing a narrow common alleyway between them for maintenance access.

At the far end of a tier, automatic devices can open all the cell doors on that level or "pop" individual cell doors. Group movements (for meals, counts, work, recreation, etc.) are made along narrow platforms on each floor, usually in the same direction, with as many as five tiers emptying into one stairwell descending to the ground level.

Many prison units permit neither individual radio nor record players. In some, one will simply find no television or perhaps a single television set up on the ground level for viewing by inmates seated in rows before the set. Another arrangement might find a television set(s) hung from a height over the flag facing the galleries. The audience might be in their cells on each balcony or sitting or standing against the railing of the balcony platform. With the signal announcing lights-out, all return to their cells and lock themselves in (which is later reinforced by the automatic locking device).

There are predictable periods in which the cells in a block are fully occupied. These periods are lights-out until breakfast call, and lockups following violence, the threat of it, or for purposes of a general shakedown (cell-by-cell search for contraband). Lockups have been known to continue from a few days to close to a year, with prisoners eating in their cells. This adds a new sanitation and health menace quite apart from the problem of managing the human problem of hundreds, perhaps thousands, of people in lockup status for any protracted period of time.

Some prisons, depending on wardens' policies, or as resources permit, allow radios, televisions or record players in cells (at prisoners' own expense). Some prisons supply earphone plug-in

devices so that each convict can individually enjoy his program without having the sound compete with others. Others without such equipment simply permit each prisoner to play what he wishes, producing cacophonous reverberations in the cellblock. The cell door is typically a gate of bars, and, therefore, does not shield sound. The rest of the cellhouse construction, steel and concrete or brick, bounces rather than absorbs sound. The normal sounds of conversation, talking and yelling among cells, or between balconies adds to the din. Occasionally, this array of sounds is punctuated by orders barked by a guard from the flag, a loudspeaker, a bell indicating feeding time, the popping of a cell door, or the clanking opening or shutting of the large cellblock entrance gates.

During preparation for bedtime many noises are masked by each other. Still, with hundreds of men trying to fall asleep after lights-out, slight sounds take on a new importance. Loud whispers or soft chatter will bring on a loud warning from the on-duty guard on the flag which will be heard by most of the residents. A cough can reverberate through the cellhouse. A toilet flushing at 2 AM can be disquieting.

If relief from cell time comes only through assigned work programs each morning, one can easily imagine the accumulated tension which may develop when such opportunities are not available: for example, when lockups occur, and especially in cellblocks used exclusively for long-term lockup such as administrative, punitive, or protective segregation units. Prisoners in such units spend anywhere from a few days to a few years in locked cells, coming out for scheduled (not always uniformly followed) weekly showers and on some days for half-hour exercise periods.

The American Correctional Association, in its recently published standards, states that there should be one inmate per cell, which should be at least 60 square feet. The "at least 60 square feet" assumes that an inmate will spend no more than 10 hours per day in the cell. When such confinement goes above 10 hours, then the standard floor space per inmate becomes 80 square feet.[2] Based on data obtained from several prisons in the four case study States, it is highly unlikely that many States currently meet these requirements. For example,

- In South Carolina's Central Correctional Institution, almost all its cells are 58 square feet and are shared by two prisoners. Its maximum-custody prisoners spend 23 hours a day in the cells with an average of 29 square feet per person. The medium- and minimum custody inmates average 10 hours per day in double cells that offer 20-29 square feet per person.

- Fort Madison in Iowa has over 100 cells, each with 52.5 square feet of floor space. Prisoners in the general population average 11 hours of daily confinement, those in voluntary segregation average 17 hours, and those in punitive segregation status are locked up over 23 hours a day.

In a quite typical 6 by 8 foot or 6 by 9 foot (48 to 54 square feet) cell, actual floor space is encroached upon by the usual wall-hung bed and some sort of open toilet and wash sink in combination or separately mounted. The bed reduces floor space by about 18 square feet, and the toilet facilities by an additional four square feet. Frequently one finds a chair, table, and shelves which reduce the square footage again by up to another 10 square feet. This leaves 16-22 square feet of movement space. This is net, not usable, space. The net includes space between the table and toilet, or the table and bed, or the cell door and bed, all of which are normally inaccessible, and; therefore, constructively unusable.

A prisoner who is 5 feet 5 inches tall, standing in the center of his cell (facing the entrace) can extend his arms, and with no effort, touch both walls over the bed and desk. A prisoner is 6 feet tall or more will have to bend his arms at the elbows to accomplish the same task. The resourcefulness of some inmates' ability to store and mount books, records, toiletries, clothes, photos, mirrors, writing supplies, mail, food, recreational games, shoes, boots, linens, tobacco, and many other personal effects and papers strains the onlooker's imagination. Further creativeness is necessary to give the cell some semblance of individuality and attractiveness. This is accomplished through multicolor paint schemes (when wardens so permit), hangings of photos, pinups (by far the most frequent), or drapes covering the toilet or dividing a portion of the cell to give the illusion of privacy. Drapes also, sometimes (in violation of the prison rules), cover a portion or the entire barred entrance door, shielding the prisoner from the incoming light, birds, or simply the public view. One might also see newspaper or cardboard rolled up and jammed between the floor and the first set of horizontal crossbars of the cell door to prevent, or at least slightly discourage, cockroaches and vermin.

It does not take a great leap of the imagination to understand the devastating effect of double celling. Predictably, problems multiply geometrically. The assignment of a second prisoner is accomplished by stacking another bed hung directly over the first. The second bed, therefore, does not invade square footage (although it does encroach upon cubic footage). All other fixed cell amenities remain the same (toilet, sink, etc.), although shelf space sometimes increases. However, the second person and

his personal belongings do play havoc with the concept of usable space. Social and psychological compression found in the one-man cell is now compounded by moving a stranger (or aquaintance) into the cell to share the intimacies of prison life. This means sharing the walls, shelves, sink, desk, and floor space.

Medium- and minimum-security institutions provide some relief and humaneness in architectural style. Some of those facilities were simply designated as having been built for other purposes (sometimes not even intended as correctional facilities). Dormitories or several-man cells are found in these two types of facilities. Dormitories can house from six men to well over 150 in single-bed or double-bunked arrangements. Some minimum facilities are arranged in single room complexes, such as Vienna, Illinois; or can be a dorm congregate living facility like Vandalia, Illinois.

Space does not permit a comprehensive description and analysis of the variety of medium and minimum facilities that exist in the nation. Briefly, there are fenced and unfenced institutions. Size can vary from a prerelease center of 10 or fewer to institutions of over 2000. These complexes may house prisoners in the variety of ways noted, but despite the American Correctional Association prescription of perimeter security that should accompany the medium and minimum institutions, one will find some with no perimeter security and others in the same designated custody level with armed guard towers. The prisoners will have different degrees of freedom within the institution, whether the latter has perimeter security or not.

Some of these medium and minimum facilities will have diversified programs ranging from academic education to vocational training, while others will be highly specialized in teaching a special skill. Still others are organized for specific purposes. These might include a factory, a forestry unit, a farm, cattle breeding, road construction, etc. A few facilities (or sometimes designated units within larger complexes) resemble a convalescent home dealing with aged or infirm prisoners.

Emergency Facilities

In recent years, emergency facilities have been quickly created, particularly in the South. for example, Florida housed approximately 200 prisoners in tents during its peak population periods. In Virginia, with the assistance of Federal funds, 96 trailer and modular units produced a 700-man facility. Similar units are being prepared for operation; defunct hospitals, mental facilities, juvenile institutions, and military installations have been

converted into medium and minimum facilities to accommodate the current population crunch. Within institutions of any category, hallways, recreation rooms, and basements have been converted to dormitories.

Crowding has unfortunate effects on other aspects of the prison program: curtailed visiting, reduced recreation, slowdowns and long waits for showers and meals, overassignment of inmates to existing jobs, and idleness. With the usual lag in both hiring and adequate training of staff, the ratio of staff to inmates diminishes. Although a staff/inmate ratio may appear to be within American Correctional Association standards of 1/6, the staff figures could include supervisory staff and thus could inflate the figures approximately 20 percent. When a maximum-custody institution like Menard (1975) is calculated in this manner, the ratio becomes 1/7; as supervisory staff are deducted, the ratio turns to 1/9. In Illinois, Pontiac (1975), with supervisory staff is 1/3.8; without, it is 1/4.8. For the same year on a medium security institution, Vandalia, is 1/5.6 and 1/6.7, respectively.

Even accurate staff/inmate ratios may be misleading. While they appear adequate for the population, the architecture, poor deployment, heavy wall or perimeter coverage can all combine to produce poor interior security. For example, a cell house of 240 might have only three people on duty at what should be peak program periods (6:00-9:00 PM). This would yield a cellhouse ratio of 1/80 or more. Not surprisingly, such coverage ratios produce greater lockup periods for inmates. Yet, the reported ratio of the total prison in which this 1/80 ratio exists might be 1/6 or 1/7, when all other guards (not in cellblocks) are included. Such assignments and personnel might include supervision of the front entrance and hospital, gun towers, roving patrols, heavier coverage of disciplinary isolation, power house supervision, visiting supervision, and sergeants, lieutenants, and captains involved in supervision. The ratio may fall off even more precipitously on the midnight shift when only one guard is assigned to a cellhouse containing upward of 200 prisoners.

An Assessment of the Capacity of Correctional Institutions

In a narrow sense, capacity is determined by a comparison of supply and demand.* Phase I of our study was essentially limited

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* Of course, qualitative aspects of capacity and adequacy may be of equal or greater importance, depending on the nature of correctional objectives. These include, among other things, programs available and living conditions, both of which will be addressed in Phase II of the study.

to institutionally defined "rated capacity" for measuring supply; population measures reflect the demand side. Unfortunately, rated capacity figures are not based on physical measurement, but on the judgements of officials who assign them. This leads not only to variations among States, but within States as well. Using data obtained in our survey, this section begins with a discussion of the meaning of rated capacity and an analysis of the present rated capacity of State and Federal correctional institutions. Some space measurement data are presented at the conclusion of the section to shed light on the validity of rated capacity measures.

A Discussion of Rated Capacity

Before proceeding with the analysis, it is critical that the notion of rated capacity be well understood. For each institution this value is assigned by individual institution management or by the central corrections agency in a State. Although a number of standards based on square footage have been proposed, there is no reason to believe that presently specified, rated capacities exhibit any degree of uniformity with respect to any of these.

Stateville Penitentiary (Illinois) can be used to illustrate problems associated with the use of rated capacity in judging the adequacy of America's prisons. Cells of roughly 60 square feet, designed to hold a single inmate, constitute the facility's primary housing space. On this basis, Stateville would have a capacity of 1392. As the population of Stateville grew during the fifties and early sixties, adjustments were made, and the rated capacity grew accordingly.

Since there were no major additions to the institution's physical dimensions during that period, it follows that there was a corresponding decline in space per inmate and in the quality of life in the cells. As reported in the case study* a ceiling of 2700--reported in our survey--was imposed by a Federal court on the number of inmates that could be held in that facility. Even so, this is nearly twice the number for which the institution was originally intended. By contrast, States or institutions may use originally conceived rated capacities in order to dramatize the need for Federal or State funding for additional bedspace.

Trenton State Prison (New Jersey) reports a rated capacity since 1970 of 172 and an average daily population that has declined

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* See Chapter II.

steadily from 1329 in 1970 to 847 for 1976. There were 1016 prisoners on June 30, 1977. The gap between rated capacity and the number of inmates was explained in a note provided in the comments of the PC-2 form which we quote below in its entirety:

> Trenton Prison, built in part in 1840, has been condemned in commission reports going back to the 1920s. The 1840 design capacity is no longer appropriate. The Correctional Master Plan survey in 1976 revealed only 172 bedspaces with more than 50 square feet of space. The square footage reported above reflects this capacity. Unfortunately, and due to present severe overcrowding in New Jersey institutions, the remaining substandard space in this structure (130,487 sq. ft., including 31,575 sq. ft. in cell space) is still being used.

California's Department of Corrections proposal to the Joint Legislative Budget Committee of the California State Legislature computed "occupancy level" on the basis of "active beds."[3] The number of active beds is determined by subtracting the number of beds "deactivated" because of declining inmate populations from the design capacity. The occupancy level for December 31, 1976 using male active beds was 92 percent, but using the design capacity, it would have been 85 percent. For female beds, the percentages were 88 and 77 percent respectively.

It is therefore important to note that terms such as "surplus" and "deficit" in bedspace are used for convenience, and should only be understood as suggestive of the capacity data that might be collected with more time, using a uniform standard.

Survey Results: Rated Capacity

Table 3.6 displays June 30, 1977 State provided rated capacities and prison populations for the four regions displayed in Table 3.1 and for the Federal Bureau of Prisons. For the nation as a whole on June 30, 1977, there were some 13,000 more prisoners in State correctional institutions than rated capacity of these facilities. In the Federal system, population exceeded rated capacity on that date by nearly 7500. The South, having more than its share of prisoners, not surprisingly has the greatest deficit in rated capacity. The North Central region also shows a deficit with the Northeast and West showing a slight surplus.

Table 3.6

Difference Between Rated Capacity and Prison Population by Region for June 30, 1977

Region	Rated Capacity (1)	Prison Population (2)	Difference (1) - (2)
Northeast	40,432	39,984	+ 448
North Central	56,629	59,879	- 3250
South	100,657	111,476	-10,819
West	40,640	40,218	+ 422
Federal	24,410*	31,876*	- 7466
Total	262,768	283,433	-20,665

Source: PC-1 and PC-2

* Includes an estimated 1500 beds and inmates in contracted prerelease facilities.

Table 3.7 displays June 30, 1977 rated capacities and prison populations for the 50 States and the District of Columbia. As suggested by Table 3.6, of the 10 States showing the worst deficit (and accounting for about 33 percent of all States' prison population), six are in the South and three are in the North Central region.

In order to contour these gross statistics, cells rated to hold one person (i.e., a rated capacity of one) were analyzed separately.* Table 3.8 shows that on June 30, 1977, Federal and State correctional institutions held approximately 127,800 prisoners in 126,700 cells rated to hold one person, a deficit of 1128, less than one percent of the total number of cells rated to hold one person. Thus, 45 percent of the nation's Federal and State inmates occupy cells rated to hold one person. There is tremendous range in the percent of the population in cells rated to hold one person, from 23 percent in the South to 84 percent in the northeastern region of the United States.

Figures 3.4 through 3.6 show a higher percentage of inmates in cells rated to hold one person in institutions over 100 years old, larger institutions, and maximum-security institutions. The

* Note that single cells originally designed for one person, but presently double or triple bunked, may not have been included in the count of cells rated for one.

Table 3.7

Difference Between Rated Capacity and Prison Population by State for June 30, 1977

State	Rated Capacity (1)	Prison Population (2)	Difference (1) - (2)
Florida	14365	18907	-4542
Michigan	11476	14451	-2975
South Carolina	4531	6775	-2244
Maryland	5244	7379	-2135
New Jersey	4886	6748	-1862
Tennessee	3508	5225	-1717
Oklahoma	2500	3775	-1275
Georgia	7635	8799	-1164
Missouri	3890	5003	-1113
Indiana	4109	5058	- 949
Arizona	2050	2971	- 921
Kentucky	2867	3715	- 848
Oregon	2351	2901	- 550
Louisiana	4900	5422	- 522
New Mexico	1145	1640	- 495
Washington	3487	3950	- 463
North Carolina	10980	11436	- 456
Wisconsin	3103	3344	- 241
Idaho	648	750	- 102
Nevada	820	908	- 88
Hawaii	443	527	- 84
Illinois	10650	10729	- 79
Kansas	2195	2231	- 36
Utah	847	880	- 33
Maine	712	711	1
Delaware	979	967	12
Arkansas	2561	2543	18
Massachusetts	2734	2687	47
Iowa	2088	2035	53
South Dakota	540	478	62
Wyoming	406	343	63
Connecticut	3341	3263	78
New Hampshire	349	265	84
Vermont	482	397	85
Mississippi	1802	1715	87
North Dakota	350	227	123
Alaska	499	364	135
Rhode Island	748	606	142
Alabama	3489	3323	166
Dist. of Columbia	2720	2540	180
Colorado	2454	2240	214
Montana	830	583	247
Minnesota	2015	1716	299
Nebraska	1846	1462	384
Pennsylvania	8024	7542	482
W. Virginia	1944	1247	697
New York	19156	18265	891
Virginia	7936	6999	937
Texas	22696	21107	1589
Ohio	14367	12645	1722
California	24660	21763	2897

Source: PC-1 and PC-2

Table 3.8

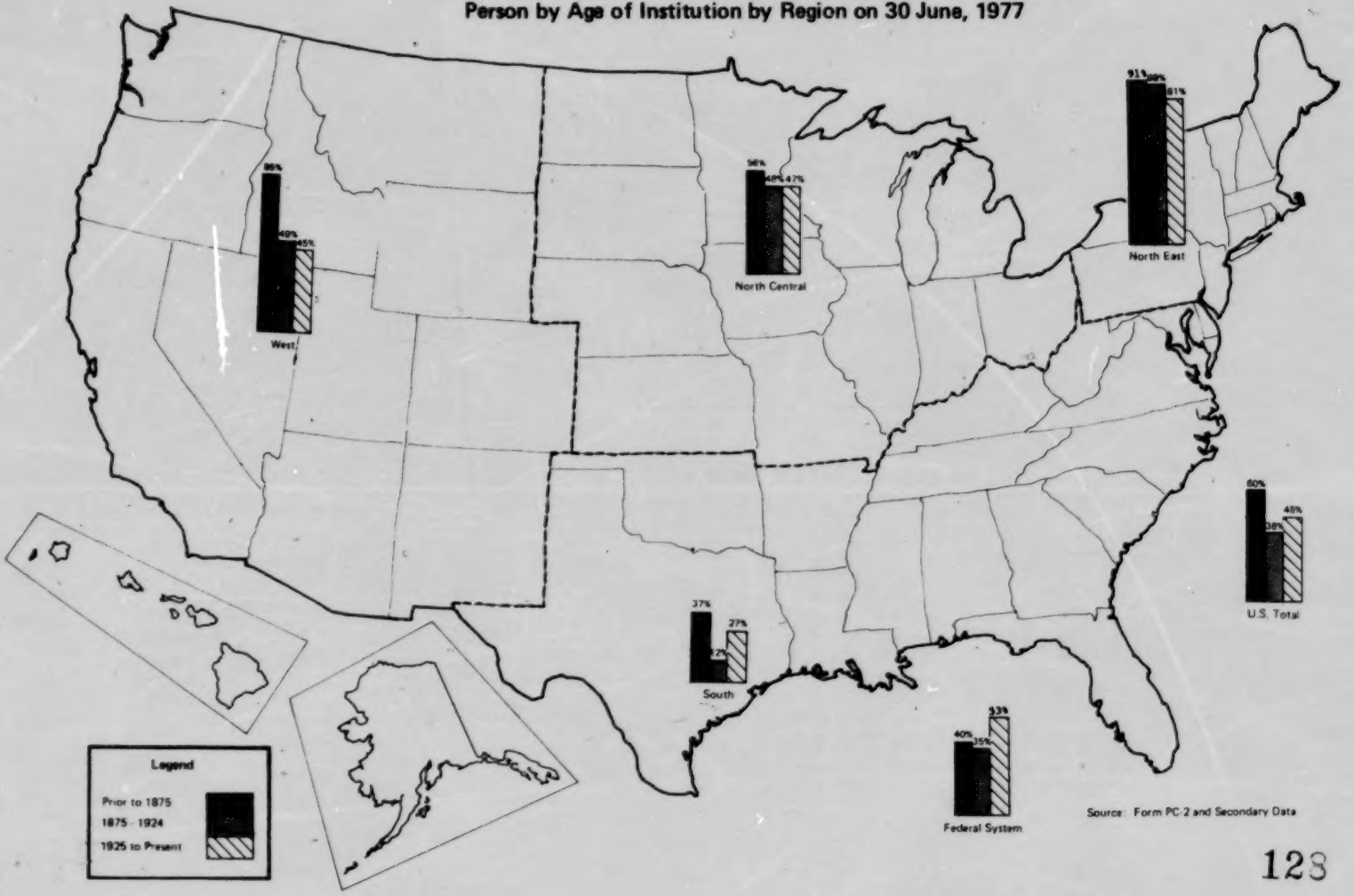
Number of Cells Rated to Hold One Person and the Number of Inmates in These Cells by Region

ion	Total Prison Population	Percent of Population in Cells Rated to Hold One Person	Number of Cells Rated to Hold One Person	Number of Inmates in Cells Rated to Hold One Person	Difference (1) - (2)
theastern	39,984	84%	36,280	33,827	2453
th Central	59,879	49	28,919	30,905	-1986
th	111,476	23	23,098	24,700	-1602
t	40,218	54	23,570	22,590	980
eral	31,876	47	14,817	15,790	-973
Total	283,433	45%	126,684	127,812	-1128

rce: PC-2

Figure 3.4

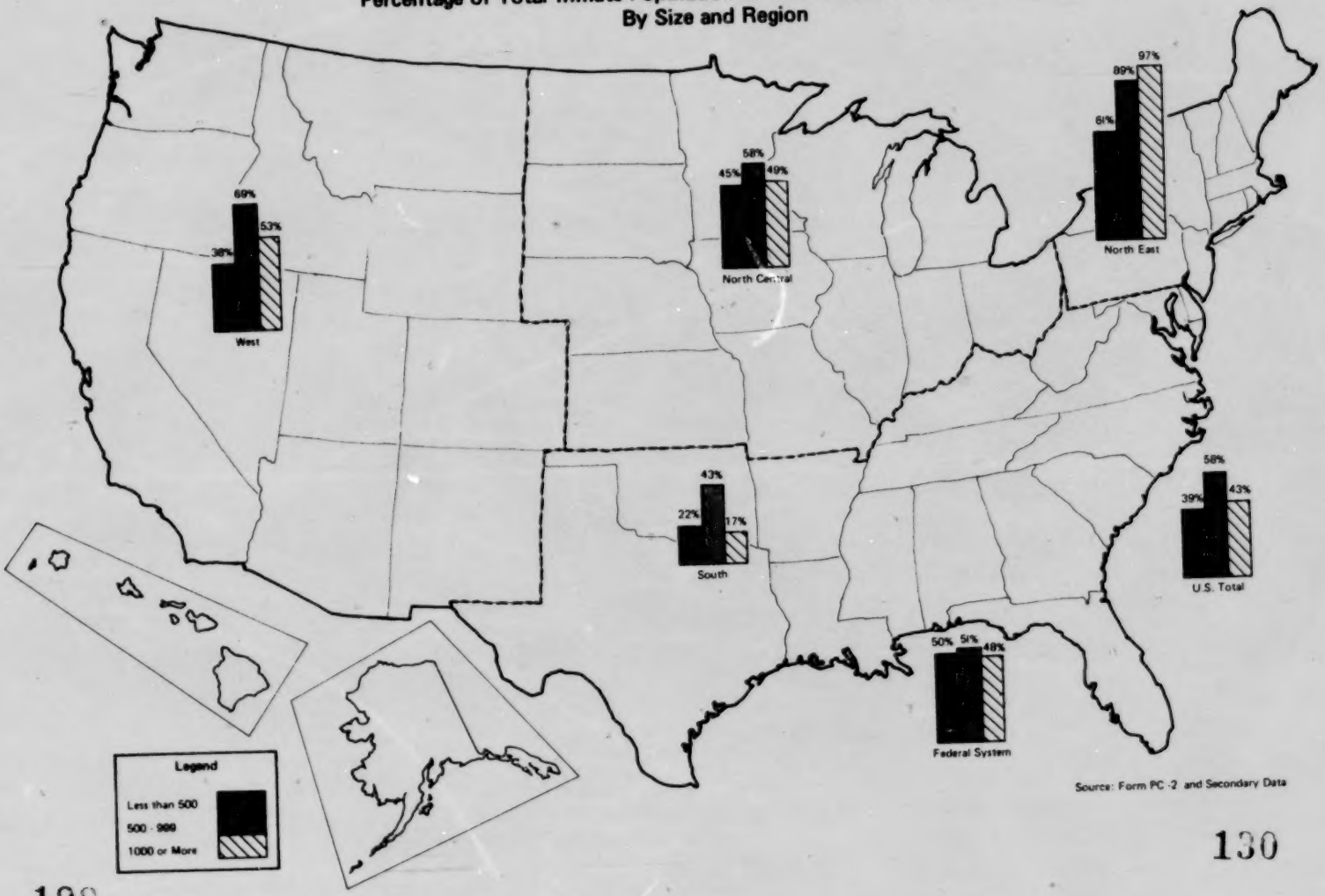
Percentage of Total Inmate Population in Cells Rated to Hold One Person by Age of Institution by Region on 30 June, 1977



Source: Form PC-2 and Secondary Data

Figure 3.5

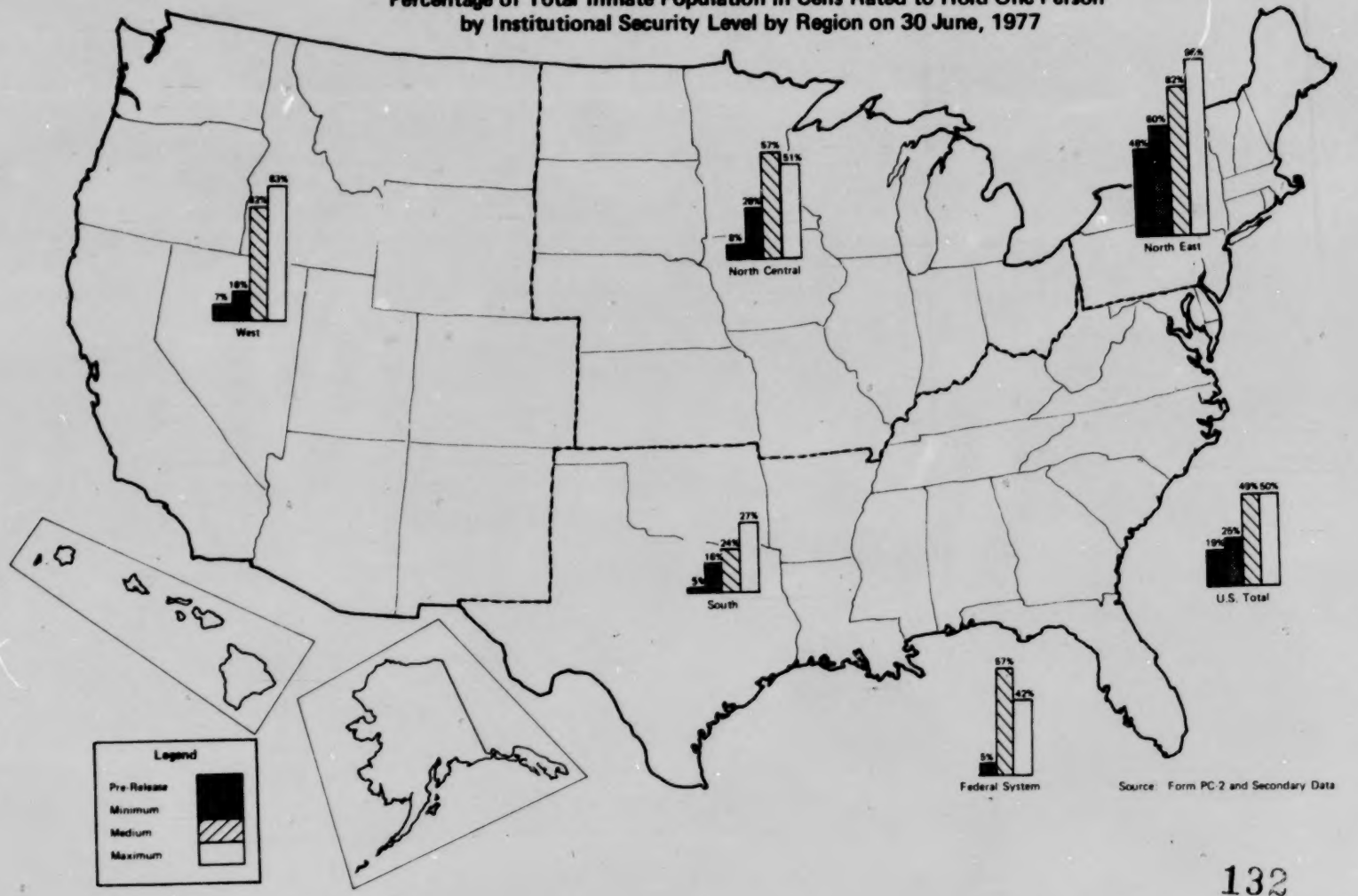
Percentage of Total Inmate Population in Cells Rated to Hold One Person
By Size and Region



Source: Form PC -2 and Secondary Data

Figure 3.6

Percentage of Total Inmate Population in Cells Rated to Hold One Person by Institutional Security Level by Region on 30 June, 1977



Source: Form PC-2 and Secondary Data

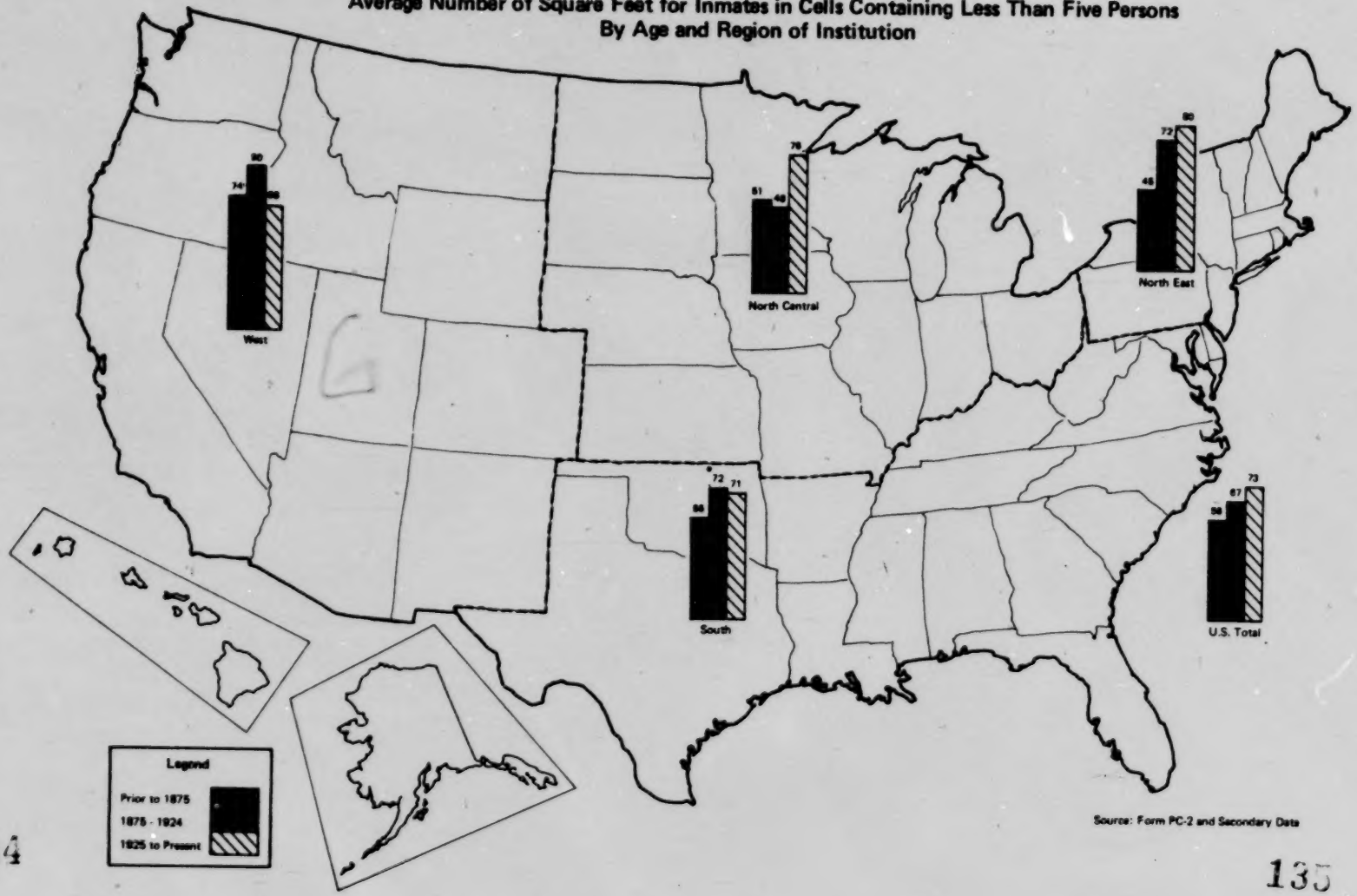
Northeast has 60 percent of the inmates in minimum-security in cells rated to hold one person compared with a range of five to 28 percent for the other regions and the Federal Bureau of Prisons. A preliminary analysis of institutional-level responses suggests that these figures are in part due to the net result of many prisoners who are doubled up in their single cells, and some institutions that have empty cells.

Figures 3.7 through 3.9 display the average number of square feet for inmates in cells by age, size, and security level of institutions. Again, a consistent pattern emerges across all regions--larger, older, and more secure Federal and State facilities tend to have the least space per inmate.*

* Only a preliminary analysis of the data on square footage was possible for this report.

Figure 3.7

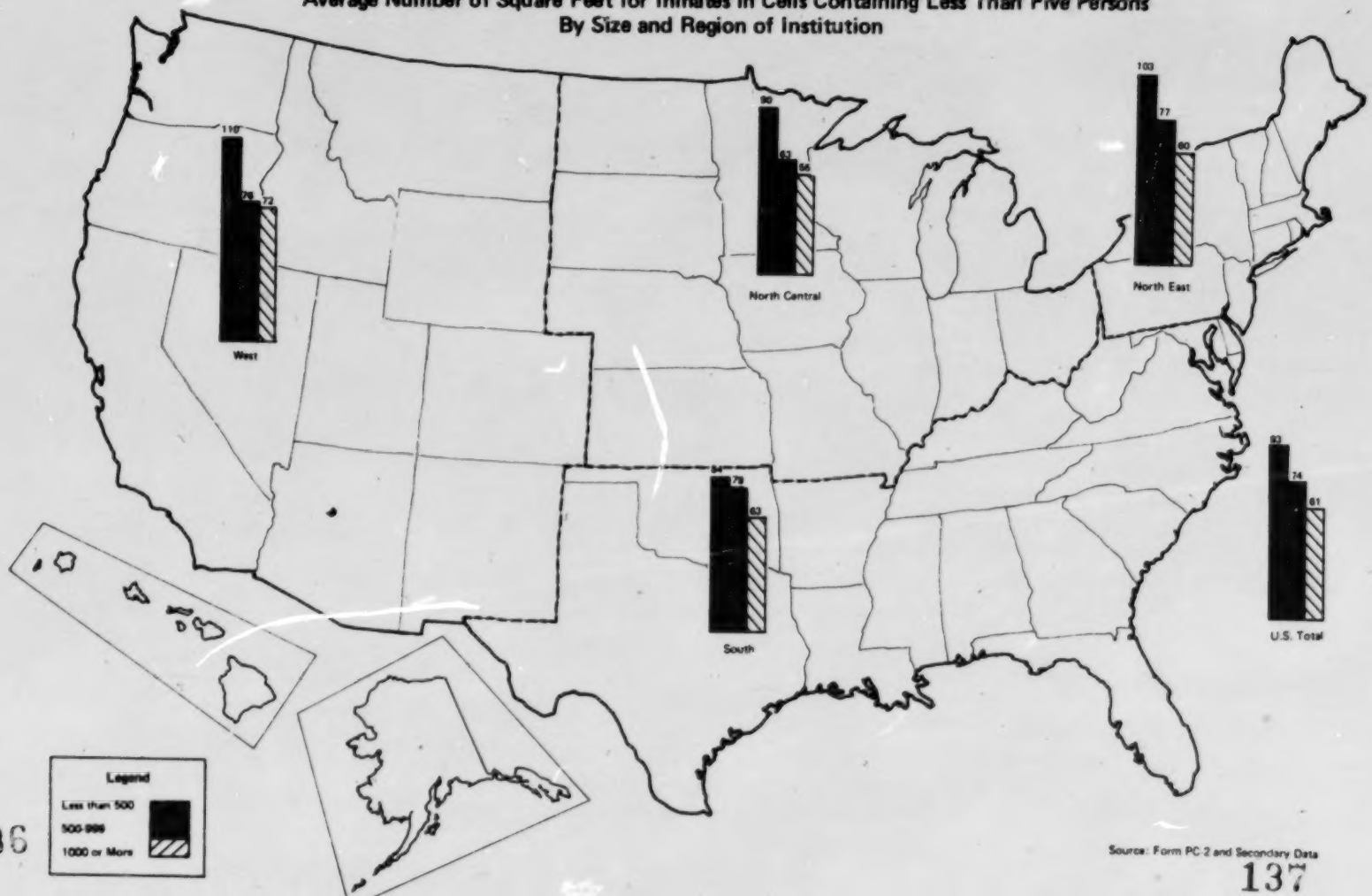
Average Number of Square Feet for Inmates in Cells Containing Less Than Five Persons By Age and Region of Institution



Source: Form PC-2 and Secondary Data

Figure 3.8

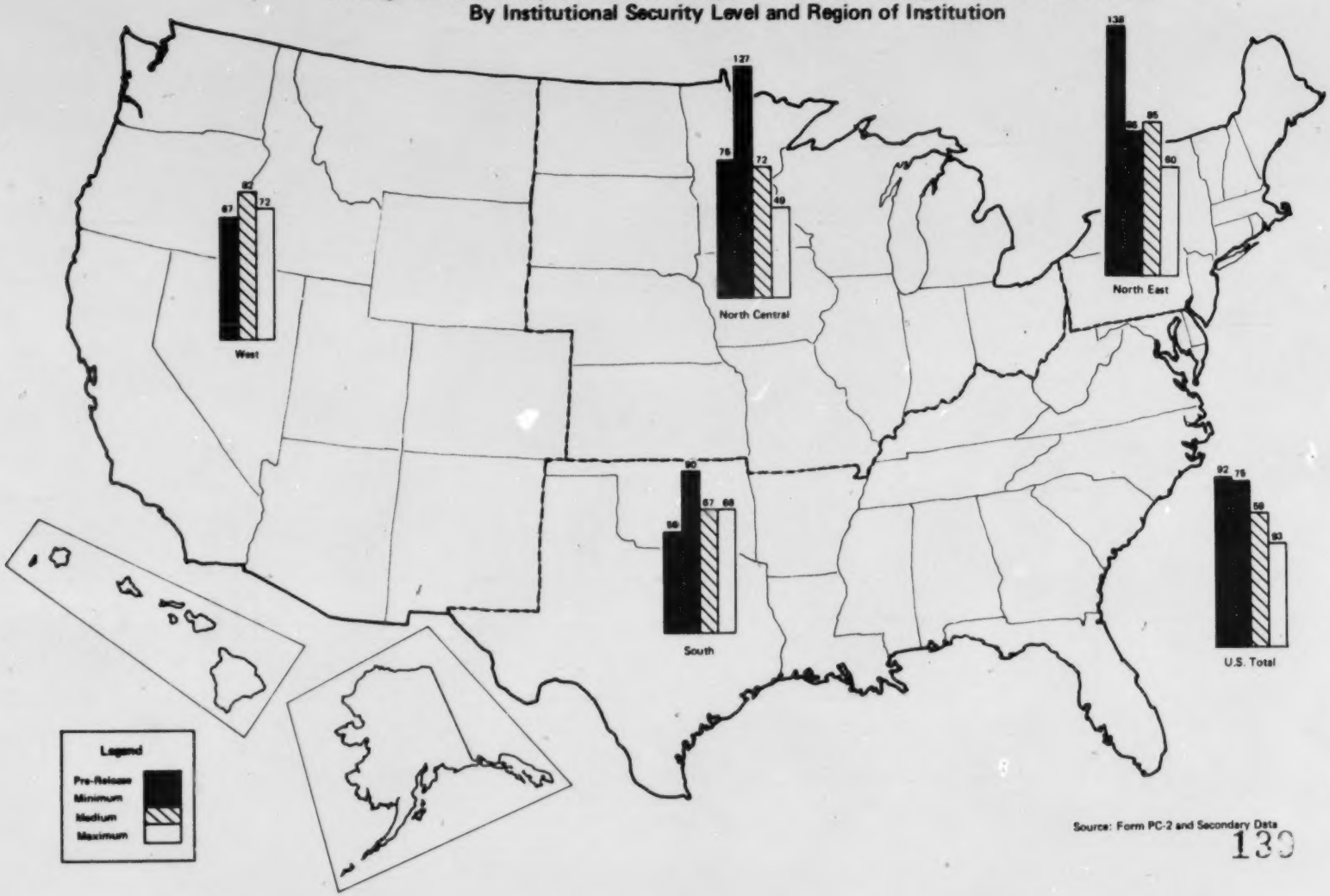
Average Number of Square Feet for Inmates in Cells Containing Less Than Five Persons
By Size and Region of Institution



Source: Form PC-2 and Secondary Data

Figure 3.9

Average Number of Square Feet for Inmates in Cells Containing Less Than Five Persons
By Institutional Security Level and Region of Institution



Source: Form PC-2 and Secondary Data

Prisoners in Residential Community-based Programs

The extent to which imprisonment is used depends in part upon the perceived availability of suitable sentencing alternatives. Of primary importance in this respect is the use of probation orders, with or without additional conditions. As noted in Chapter III, there is considerable variation from State to State in the development of probation services. In some instances, as in California, probation subsidy schemes have been used as ways of both improving the quality of probation supervision and reducing rates of commitment to prison. An important research issue is the extent to which sentencing options to prison actually serve that purpose, rather than merely supplementing existing institutional arrangements. Examination of this and associated issues with regard to the use of probation will be explored in Phase II of this study.

The study's examination of community-based corrections during Phase I has been confined to residential community-based programs operated by or under contract to departments of corrections. The survey of Federal and State corrections was concerned only with persons under the jurisdiction of these agencies. Despite the considerable attention devoted to community-based corrections in professional journals and the media, the survey results dramatically confirm that in terms of absolute numbers, and in percentage of prisoners involved, these residential programs are in a very embryonic stage of development. The responses to the survey identified a total of 8,517 individuals in community-based corrections programs.*

Most of these programs are described as prerelease centers, providing a transitional residence for prisoners in the final stage of their sentence. In other instances, the program might best be described as farms or road gangs.

The survey data indicate that 27 states and the Federal Bureau of Prisons directly operate such programs. Only four states (Alabama, Illinois, Missouri, and New Jersey) and the Federal system reported having 10 or more programs; nine states reported having only one. Seven states and the Federal Bureau of Prisons reported contracts with privately operated residential centers. Of particular significance to this study is the finding that most of the centers directly operated by corrections departments are

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* Six hundred eighty-seven of these were Federal prisoners, held in 12 community-based centers; there are also 1,500 Federal prisoners in contracted prerelease facilities, and these persons are excluded from this analysis.

well below their rated capacity.* Twenty-two out of 27 jurisdictions reported, on an aggregated basis, that capacity exceeded occupancy by 823 beds. (Data were not available from one jurisdiction.) Only Missouri and New Jersey reported overcrowding in State-oriented prerelease/work release facilities (188 inmates for a rated capacity of 140 and 992 inmates for a rated capacity of 781 respectively). Oregon and Washington were both slightly overrated capacity.

There are a number of ironies concerning the data. First, at a time of prison crowding, such centers are underutilized. Second, in several jurisdictions where the crowding problem is especially severe, there are no, or very few, programs of this sort. Finally, even if existing centers were fully occupied, they would have very little impact on the overall prison population situation. Total nationwide capacity, in centers directly operated by corrections departments in the survey, was less then 10,000 beds.

Plans for Prison System Expansion and Renovation

In addition to information on present capacities, the survey sought to collect data on plans for prison system expansion through new construction, renovation, or acquisition and on system contraction through closings or changes in utilization.** Specifically, respondents provided data on the number of beds to be added or removed per year, from 1977 through 1982. In addition, estimated costs for proposed capital investments were provided.

For a number of reasons, considerable care should be exercised in interpreting the responses that cover a range of possibilities, from building actually underway to long-term plans for which appropriations have still to be requested. First, the estimates of the number of beds added and the associated costs generally refer to projects that will be completed (and in some cases, started) in the future. They are therefore subject to the vagaries of both financial and political support, the impact of rising construction costs, changes in the notions of what constitutes either sound correctional practice or appropriate standards, and the general uncertainty associated with any planned project.

Second, although the data is presented in terms of beds, this is not a standardized measure of correctional capacity. As discussed

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* Data on capacity were not available with regard to privately operated centers.

** See Technical Appendix, Form PC-1.

earlier, a bed might be located in a maximum- or minimum-security prison, or in a reception unit, camp, work release center, or industrial training center. A group of beds may be part of a program to construct a new State correctional facility or may simply be included in an addition to an existing prison. Costs associated with adding beds may involve nothing more than remodeling and renovating a presently inadequate building; on the other hand they may include land acquisition, building and road construction, and equipment purchase. Consequently, inferences about States' plans to add beds, and their associated costs, must be made with great care.

Planned Bed Expansion

Table 3.9 indicates the June 30, 1977 rated capacity, the number of beds to be added, the number of beds to be closed, the net difference, cost estimates, and rated capacity in 1982. In no case was there a net reduction of beds in any system over the six-year period. Occasionally, matched additions and removals (usually associated with renovation) were reported.

Figures 3.10 through 3.14 plot past and current rated capacity from December 31, 1972 to December 31, 1982 and past prison population to December 31, 1976 for each region and the Federal prison system. With the exception of the South, the planned rated capacity increase shows a modest increase between now and the end of 1982. The South, in contrast, shows a sharp increase in rated capacity over this period. There was a close correspondence between the number of prisoners and rated capacity on December 31, 1976 for the three non-Southern regions and as shown in Table 3.7, this is still the case for the Northeast and Western regions. The North Central region shows a deficity of over 3,000 beds on June 30, 1977, while the South has shown a deficit since early 1974 that now stands at nearly 11,000 beds at midyear. Since 1972, the Federal system has consistently had more inmates than beds; without a drop in the number of Federal prisoners, this seems likely to continue into the foreseeable future.

On June 30, 1977, the rated capacity of State and Federal prisons in the United States was 261,268 beds. By 1982, planned net additions to this capacity as reported in this survey come to 62,194 (i.e., an increase of 24 percent). In terms of volume of planned net additions, five States (Florida, Louisiana, Michigan, South Carolina, and Texas) are the leaders with a combined total of almost half the planned net increase. With the exception of Texas, which showed a surplus of some 1600 on June 30, 1977, these States match those showing the largest deficits in rated capacity. On the other hand, Colorado, the District of Columbia, Hawaii, Iowa, Minnesota, New Hampshire, North Dakota, Ohio, South

Table 3.9

Estimated Costs of Planned Prison Construction, Renovation, or Acquisition Between 30 June 1977 and 31 December 1982, by Region and State

Region and State	Rated Capacity 6-30-77	Number of New Beds[1]			Number of beds Removed	Net Increase of Beds	Total Costs (Millions)	Cost Per bed (Thousands)	Rated Capacity 12-31-82
		Total	Cost Data not Available	Cost Data Available					
United States, TOTAL	261,268	66,799	18,805	47,994	4,605	62,194	1,089.3	22.7	324,962
Federal Institutions, TOTAL	22,910	3,269	0	3,269	1,050	2,219	103.5	31.7	26,629
State Institutions, TOTAL	238,358	63,530	18,805	44,725	3,555	59,975	985.8	33.0	298,333
Northeast	48,432	5,602	4,786	616	202	5,200	18.3	29.7	45,632
Maine	713	300	300	0	202	98	-	-	810
New Hampshire	349	0	0	0	0	0	-	-	349
Vermont	483	74	56[2]	18	0	74	0.1	6.9	356
Massachusetts	3,734	1,180	1,180	0	0	1,180	-	-	3,914
Rhode Island	748	418	0	418	0	418[3]	10.2	24.4	1,166
Connecticut	3,341	0	0	0	0	0	-	-	3,341
New York	19,154	1,488	1,488	0	0	1,488	-	-	30,644
New Jersey	4,886[4]	1,762	1,762	0	0	1,762	-	-	6,648
Pennsylvania	6,824	180	0	180	0	180	8.0	44.4	8,294
North Central	56,629	12,047	3,555	9,492	484	11,563	394.4	31.3	68,192
Ohio	14,367	0	0	0	0	0	-	-	14,367
Indiana	4,109	1,310	1,200	110[5]	0	1,310	0.3	4.1	5,419
Illinois	10,650	2,550	0	2,550	0	2,550	59.6	23.3	13,200
Wisconsin	11,476	3,835	435	3,400	0	3,835	111.5	32.8	15,311
Minnesota	3,183	1,596	350	1,206	484	1,072	39.1[6]	24.1	4,175
Iowa	3,015	0	0	0	0	0[7]	-	-	3,015
Missouri	3,088	0	0	0	0	0	-	-	3,088
North Dakota	3,890	1,054	554	500	0	1,054	36.6	34.7	4,944
South Dakota	350	0	0	0	0	0	-	-	330
Nebraska	540	0	0	0	0	0	-	-	540
Kansas	1,846	1,342	16	1,226	0	1,342	38.5	31.4	3,088
	3,195	500	0	500	0	500	18.5	37.0	3,695
South	100,657	37,320	8,382	29,038	1,397	36,023	517.7	17.8	136,680
Delaware	979	92	0	92	4	88	0.5	5.6	1,067
Maryland	5,244	3,340	890	1,470	0	3,340	44.2	30.6	7,604
District of Columbia	2,720	0	0	0	0	0	13.0	-	2,720
Virginia	7,936	1,760	200	1,560[8]	0	1,760	29.6	19.0	9,696
West Virginia	1,944	0	0	0	0	0	-	-	1,944
North Carolina	10,980	1,442	0	1,442	0	1,442	33.8[9]	16.5	12,422
South Carolina	6,831	3,936	0	3,936	293	3,643	57.0[10]	14.5	8,174
Georgia	7,635	3,440	3,440	0	0	3,440	-	-	11,075
Florida	14,365	5,325	0	5,325	0	5,325	77.6	14.6	19,690
Kentucky	2,867	385	0	385	0	385	19.0	49.4	3,252
Tennessee	3,588	800	0	800	0	800	12.0	15.0	4,388
Alabama	3,489	2,528	60[11]	2,468	0	2,528	38.0	15.4	6,017
Mississippi	1,802	1,296	1,296	0	0[12]	1,296	-	-	3,098
Arkansas	2,541	376	376	0	0	376	-	-	2,917
Louisiana	4,900	4,660	0	4,660	500	4,160	135.4[13]	26.9	9,060
Oklahoma	3,500	3,020	3,020	0	500	1,520[14]	-	-	4,020
Texas	22,696	6,900	0	6,900	0	6,900	78.0	11.3	29,596
West	40,640	8,761	3,182	5,579	1,372	7,189	135.4	37.8	47,829
Montana	830	114	0	114	0	114	3.9	34.8	944
Idaho	648	362	74	288	0	362	2.4	8.5	1,010
Wyoming	400	554	50	504	404	148	25.0	49.6	954
Colorado	2,454	1,026	0	1,026	800	226	19.6	19.2	2,680
New Mexico	1,145	150	150	0	0	150	-	-	1,295
Arizona	3,050	2,722	128[11]	2,594	336	2,386	67.9	26.2	4,436
Utah	847	235	0	235	0	235	1.0	4.2	1,082
Nevada	820	544	0	544	30	514	23.8[15]	43.7	1,334
Oregon	2,487	494	350	144	0	494	10.5	72.9	2,981
California	34,660	2,400	2,400	0	0	2,400	1.3	10.0	3,481
Alaska	499	30	30[11]	0	0	30	-	-	27,060
Hawaii	643	0	0	0	0	0	-	-	529
									643

[1] Mid-points were used when ranges were provided by the states.

[2] The number of beds to be added had to result of a range for a meaningful cost estimate.

[3] The planned increase will allow for the gradual abandonment of existing inadequate facilities

[4] The rated capacity figure includes space for 300 juveniles.

[5] There were no costs involved for 40 work release beds in Michigan City.

[6] An additional cost of $1,000,000 was given for advance planning and design of a new maximum security institution.

[7] During the next five years Minnesota plans to decrease its capacity in some institutions and possibly utilize juvenile facilities for adults, thus maintaining its current rated capacity.

Source: PC-1

[8] Some construction depends on the passage of a bond referendum in November 1978

[9] An additional cost of $24,027,000 was given for renovation of existing facilities.

[10] Cost for additions to existing institutions include some renovation costs as well as add-on construction.

[11] Leased facility.

[12] Camps 8 (124 beds) and 9 (76 beds) will close during the last half of 1977. This does not result in a drop in the 30 June 1977 rated capacity.

[13] An additional cost of $6,000,000 was given for new land acquisition, construction and equipment in Orleans Parish.

[14] There are tentative plans for a Geriatrics Unit at McAlester.

[15] An additional cost of $8,522,400 was given for renovation of existing facilities.

Figure 3.10

Number of Prisoners and Rated Capacity of the Northeastern Region of the United States: 1972-1982

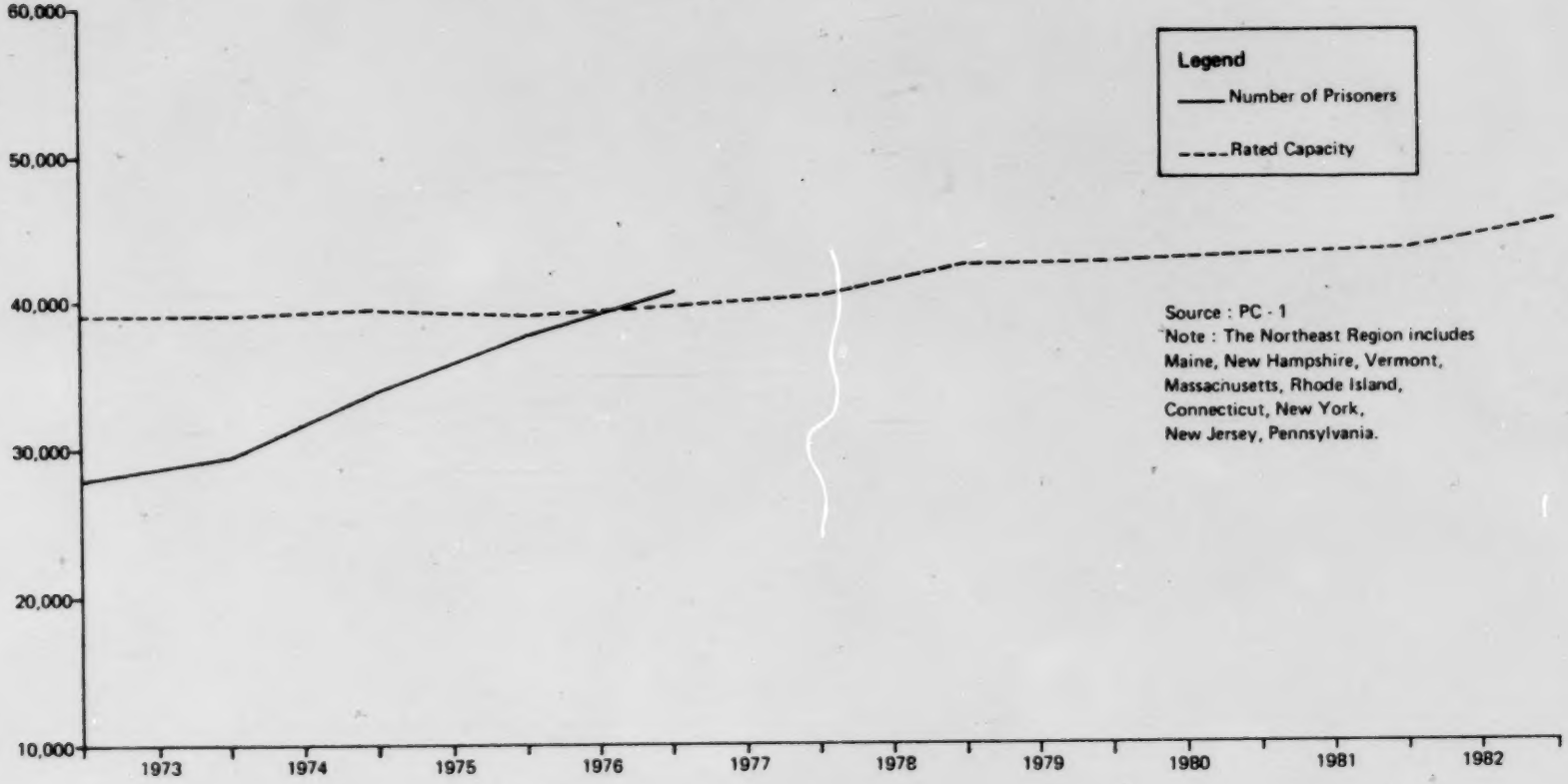
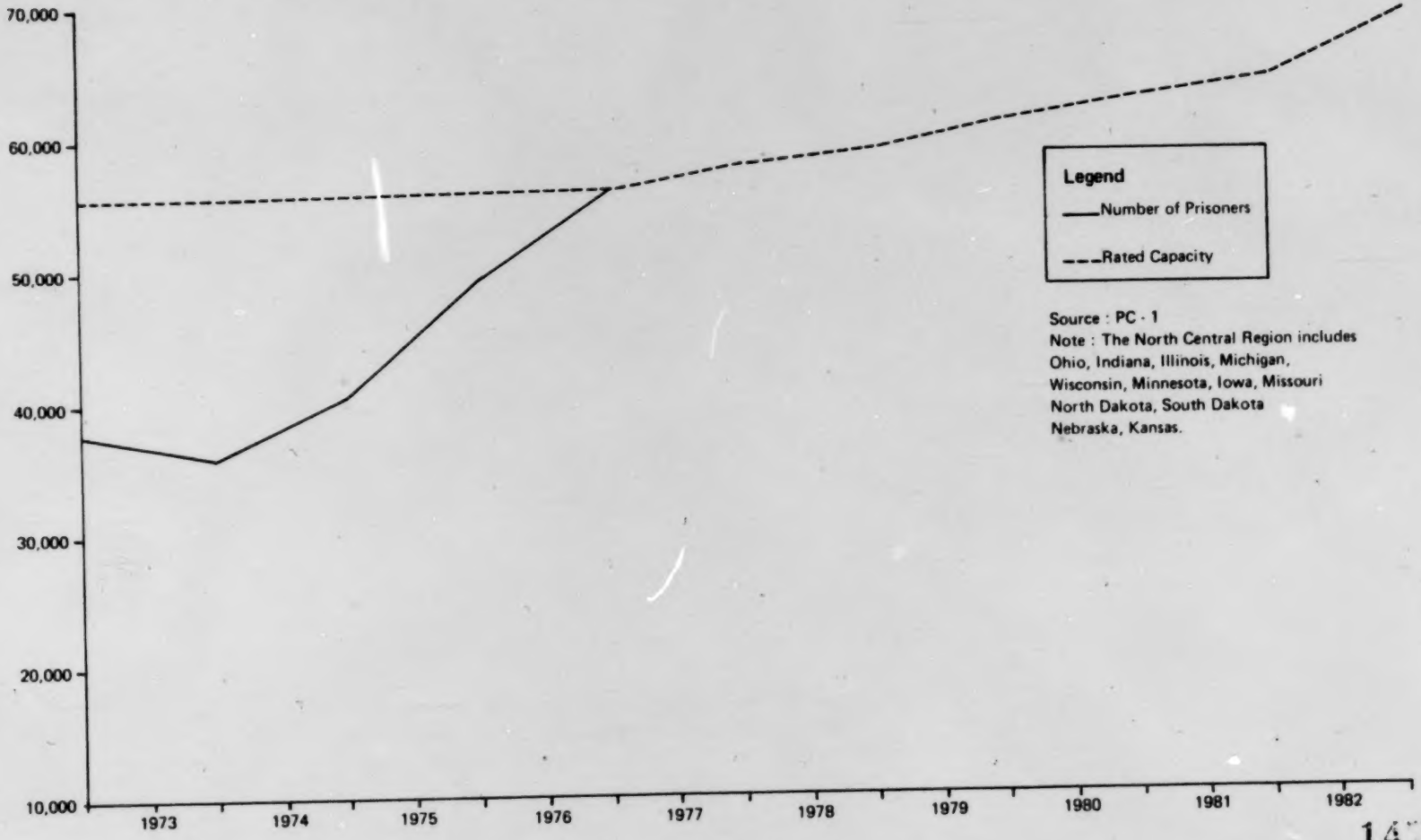


Figure 3.11

Number of Prisoners and Rated Capacity of the North Central Region of the United States: 1972-1982



Source : PC - 1
Note : The North Central Region includes Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri North Dakota, South Dakota Nebraska, Kansas.

Figure 3.12

Number of Prisoners and Rated Capacity of the Southern Region of the United States: 1972-1982

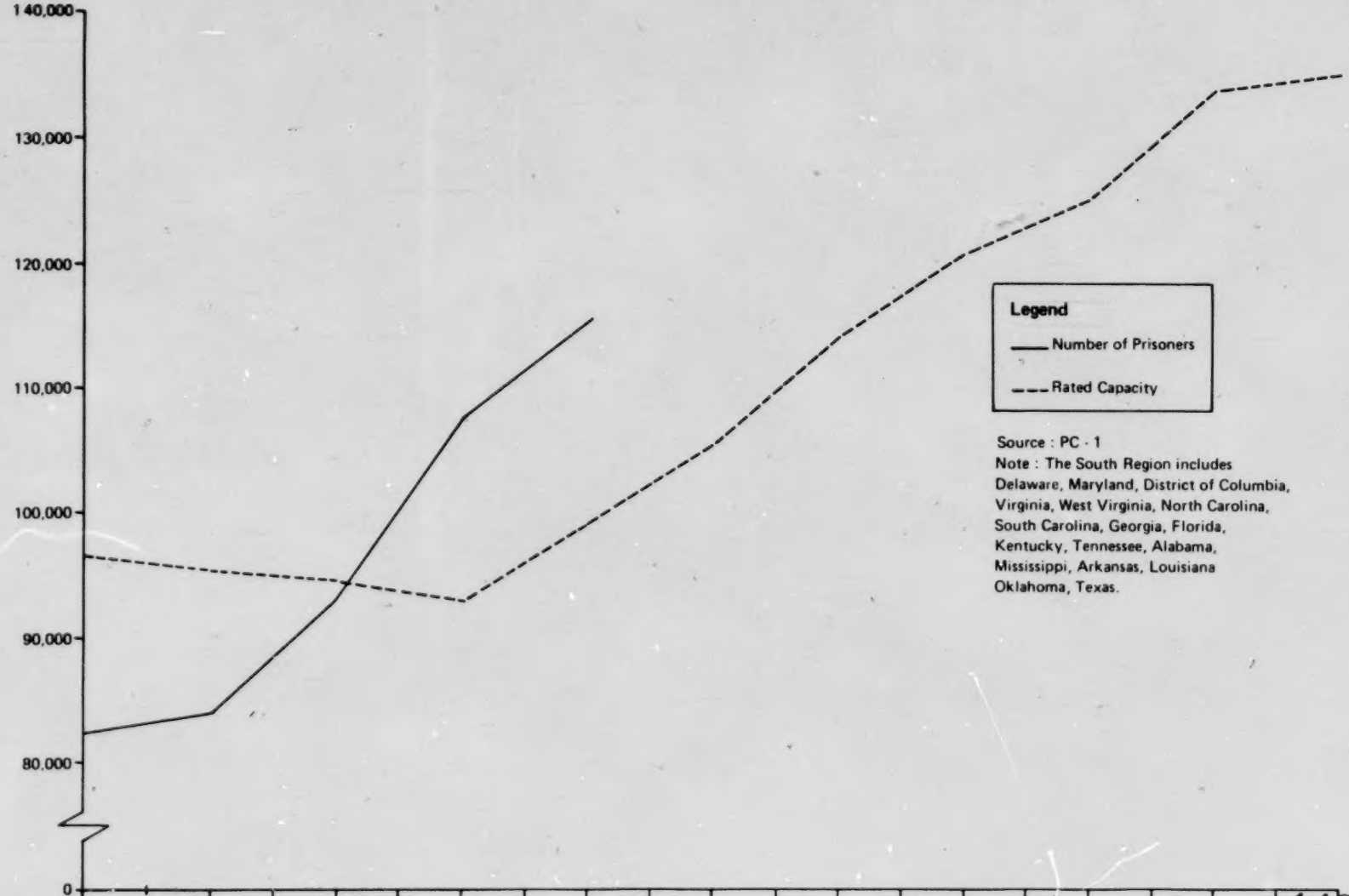


Figure 3.13

Number of Prisoners and Rated Capacity of the Western Region of the United States: 1972-1982

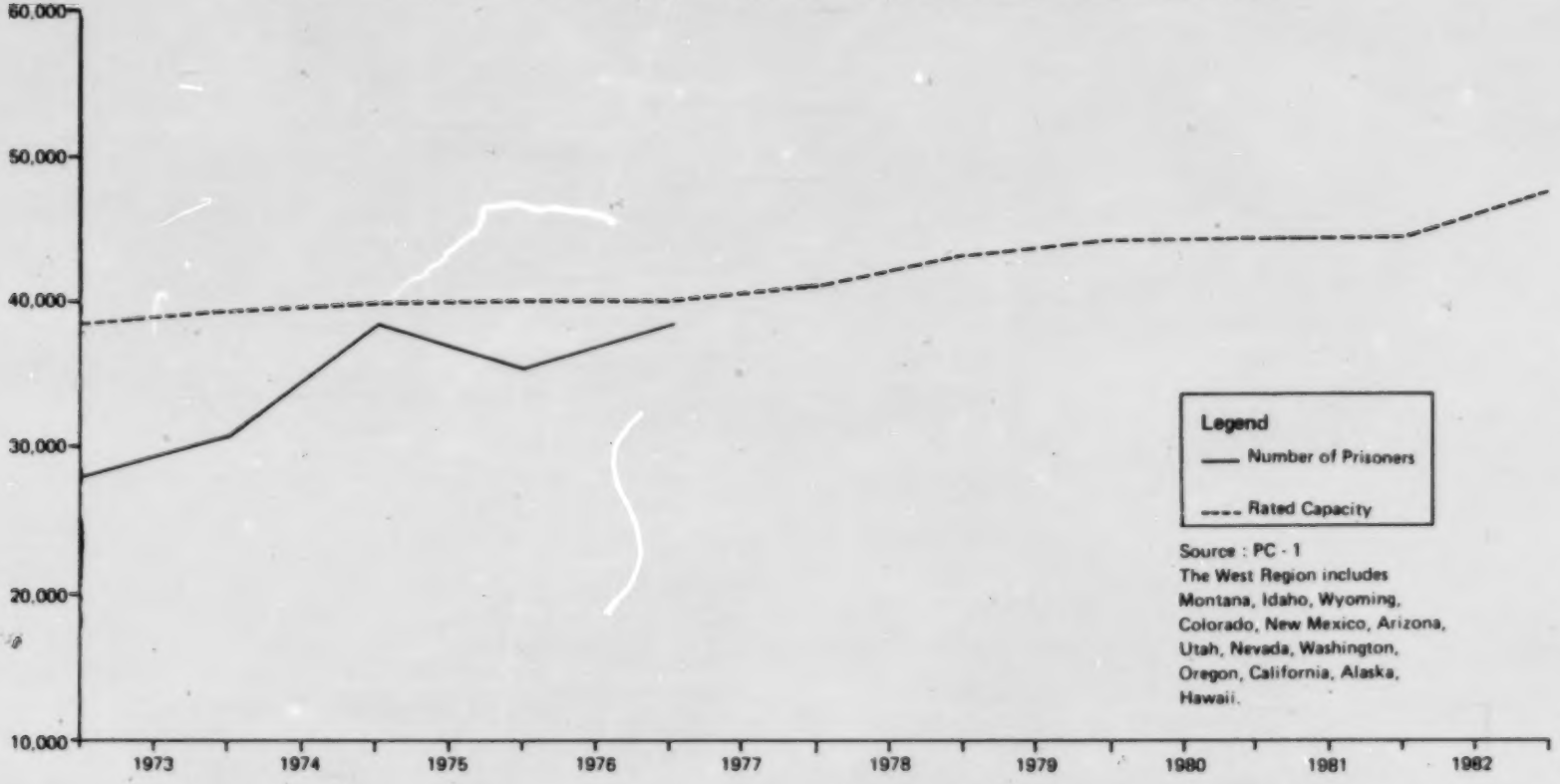
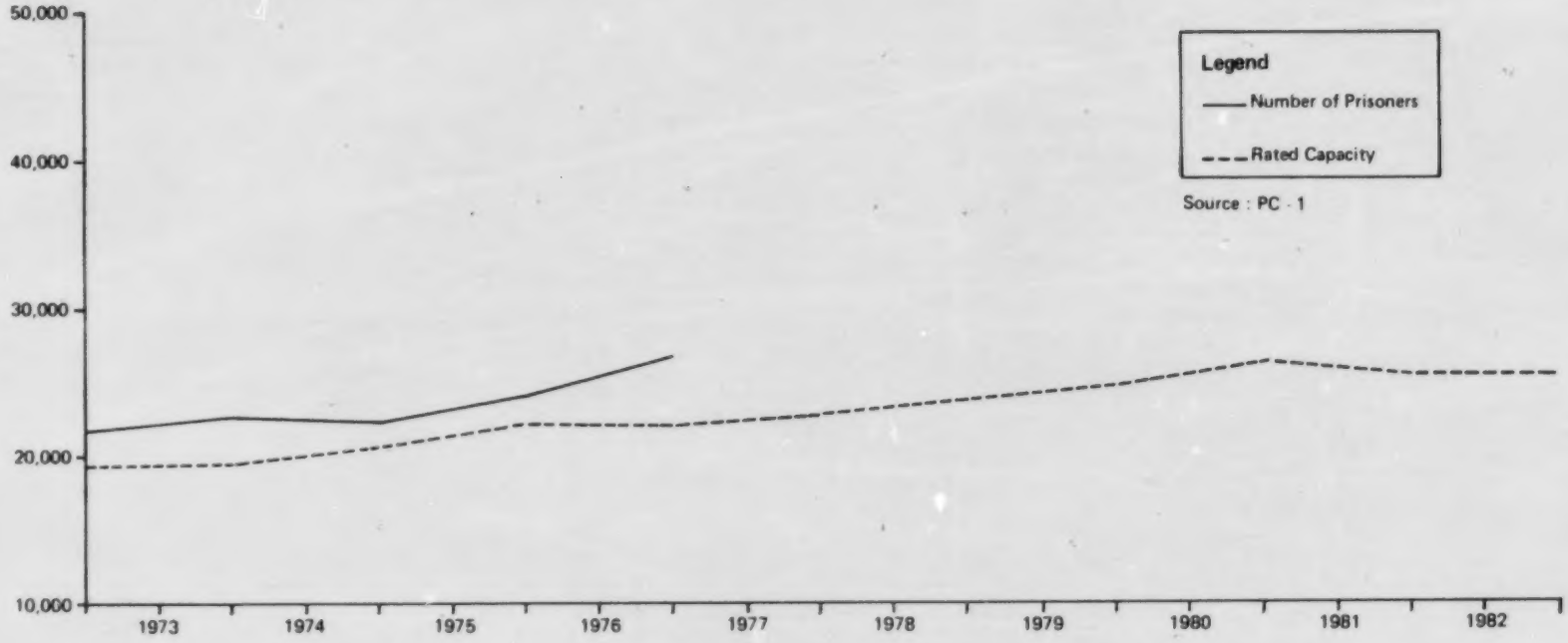


Figure 3.14

Number of Prisoners and Rated Capacity of the Federal Prison System: 1972-1982



Dakota, and West Virginia apparently have no plans to add to their current capacities. All of these States, except Hawaii, which shows a small deficit, indicated adequate rated capacity on June 30, 1977.

Table 3.9 also displays proposed expenditure on all new prison construction and renovations, along with totals for each State, and the cost per bed processed (not necessarily net additions). States with the largest planned expenditures are, not surprisingly, those with the greatest planned bed increases: Arizona, Florida, Illinois, Louisiana, Michigan, and South Carolina; all plan to spend more than 50 million dollars by 1982.

Although there is a substantial amount of data missing, it is possible to estimate the total planned expenditure on the prison system in the United States by applying the average cost per bed (22 thousand dollars) for those beds with which we can associate costs, to those beds on which we have no data.* This estimation is 1,420 billion dollars over the next six years, or roughly 237 million dollars each year.

With regard to proportional increases in rated capacity planned, Table 3.10 displays the net increase in beds as a fraction of current rated capacity. Eleven States plan to increase their capacity by more than 50 percent. Of these the great majority are in the South. In general, it also appears that the States that show the greatest proportional increase in capacity are those that have the greatest proportion imprisoned per 18-44 age group of the general population. In 1976 (see Figure 3.15), 16 States and the District of Columbia imprisoned more than 0.3 percent of their populations in the age range of 18-44 years. Of these 16 States, 10 are planning to increase their capacities by more than one-third.

We emphasize that just as projections reflect the use of particular assumptions about the flow of prison inmates, estimates of future capacity are also based on States' assumptions regarding net additions in bedspace. In both cases, different assumptions might lead to quite different results. With these limitations in mind, we note that additions currently planned may well exceed projected demand in 1982. If all reported construction, renova-

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* Using 22 thousand dollars as the average cost per bed is almost certainly an underestimate. A recent study estimated construction cost per bed as follows: maximum security 37,117 dollars; mixed security 28,480 dollars; jails 27,342 dollars. National Institute of Law Enforcement and Criminal Justice Cost Analysis of Correctional Standards, Vol. II. Note, however, that the 22 thousand dollar figure is an average cost per bed added and includes renovated and acquired or converted space as well as space to be constructed.

Table 3.10

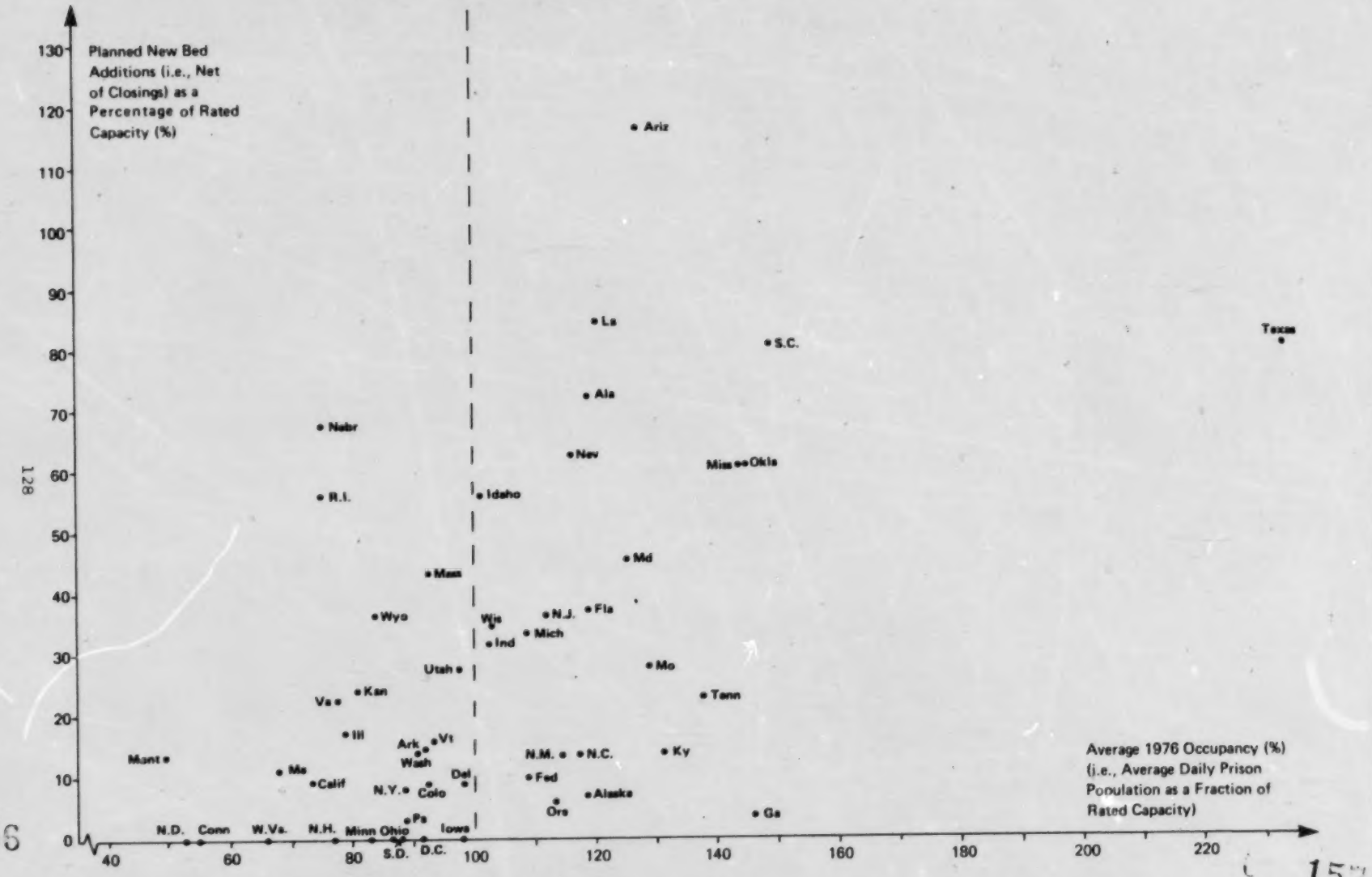
Net Bed Increase as a Fraction of Current Capacity from June 30, 1977 to December 31, 1982

0%	0.1 - 19.9%	20 - 49.9%	≥50%
Connecticut	Pa. (2.2)	Va. (22.2)	Ida. (55.9)
D.C.	Ga. (3.7)	Ks. (22.8)	R.I. (55.9)
Hawaii	Ore. (5.5)	Tenn. (22.8)	Miss. (60.3)
Iowa	Alaska (6.0)	Mo. (27.1)	Okla. (60.8)
Minnesota	N.Y. (7.8)	Utah (27.7)	Nev. (62.7)
New Hampshire	Del. (9.0)	Ind. (31.9)	Neb. (67.3)
North Dakota	Colo. (9.2)	Mich. (33.4)	Ala. (72.5)
Ohio	Federal (9.7)	Wis. (34.5)	Tex. (79.1)
South Dakota	Calif. (9.8)	N.J. (36.1)	S. C. (80.4)
West Virginia	Me. (11.2)	Wyo. (36.5)	La. (84.9)
	N.M. (13.1)	Fla. (37.1)	Ariz. (116.4)
	N.C. (13.1)	Mass. (43.2)	
	Ky. (13.4)	Md. (45.0)	
	Mont. (13.7)		
	Wash. (14.2)		
	Ark. (14.7)		
	Vt. (15.1)		
	Ill. (16.9)		

Source: PC-1

Figure 3.15

NET ADDITIONS TO CAPACITY BY AVERAGE DAILY PRISON POPULATION



tion, and acquisition plans are carried out by then, and if the rated capacity of current facilities remains unchanged, total rated capacity will rise to almost 325,000 beds by 1982. This projected capacity is intermediate between the highest and lowest prison populations projected under the assumptions of Chapter IV. If both intake and average sentence lengths remain at their present levels, the newly added space will serve to house populations up to 10 percent higher than those projected for year end. Given seasonal and day-to-day fluctuations in inmate counts, such plans do not represent a large surplus of space. The highest of the projections of present trends implies a population that would exceed rated capacity by nearly 18 percent at the end of 1982, as compared to a present deficit of approximately eight percent (including State prisoners temporarily held in local jails).

III. NOTES

1. American Correctional Association, Manual of Correctional Standards, (3rd ed.: College Park, Md.: 1966).

2. "Prison Unit Issues a Set of Standards," New York Times, September, 6, 1977.

3. California Department of Corrections, Proposal to the Joint Legislative Budget Committee of the California State Legislature, New Facilities Plan for 1977-78 Fiscal Year, (April 1, 1977).

4. Paul Lerman, Community Treatment and Social Control (Chicago: University of Chicago Press, 1975).

IV. PROJECTION TECHNIQUES

Overview of the Projection Problem

Prison population is not a natural phenonenon responding solely to the dynamics of past trends. It is subject to social and political influences, ranging from the availability of community corrections resources to political pressures on parole boards and State legislators. Over the course of years, adaptive measures responding to variations in prison populations have been developed. Anecdotal evidence suggests that judges adjust sentences, and parole boards exercise their discretion, to stabilize inmate populations. During this decade, a number of innovations and reforms have been proposed or implemented with the potential to upset and replace old informal control mechanisms. An important objective of this study is to understand the correctional population response to the new pressure induced by these changes. A secondary objective is to formulate the probable consequences of policies presently in force. Presumably, the present prison-population level reflects the effects of current policies; therefore, we can extrapolate past trends to express the continuation of present policies.

Ultimately, these two purposes have an underlying unity: Responsible statistical statements about trends cannot be made without understanding the forces (both random and policy-related) driving the trends. The essential intellectual task of developing projections thus emerges as gathering empirical data on which to base an understanding of the mechanisms by which past correctional history was controlled. To the extent that we remain uncertain about those mechanisms, any "black box" projection methods necessarily result in unreliable estimates.

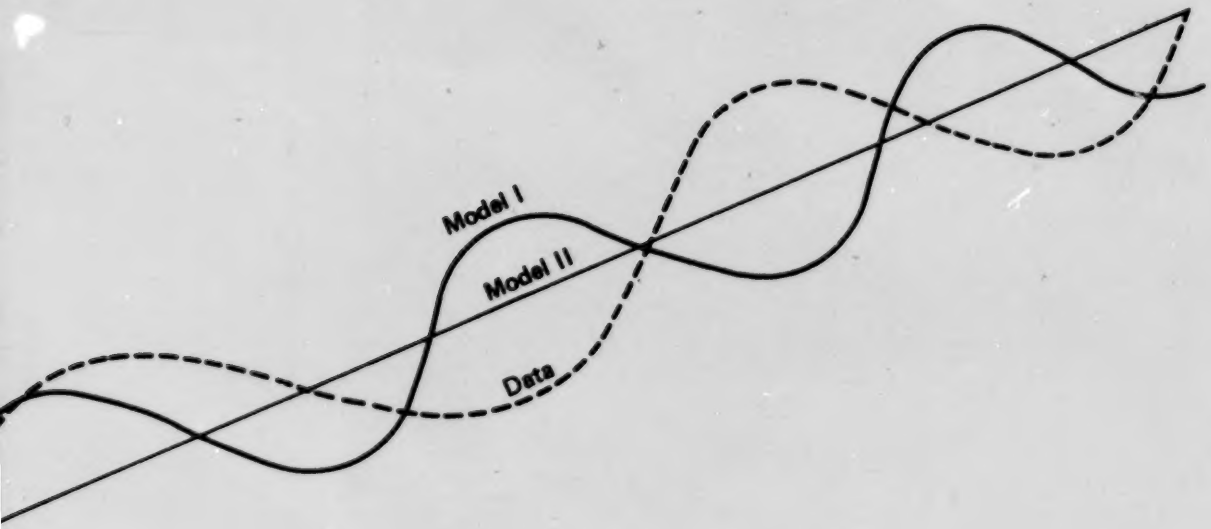
As a practical matter, however, knowledge about the behavior of significant criminal justice system actors is presently limited. Illuminating the inner workings of the black box requires answers to complex empirical questions for which data are often unavailable. Unfortunately, these facts cannot simply be excluded from the projections. Every technique, from the simplest extrapolation to the most complex social simulation, involves a series of implicit or explicit assumptions about the effects of these unmeasured forces. Thus, each projection becomes a mathematical examination of the consequences of a set of assumptions, rather than a statement about the future. In Chapter V these assumptions take the form of descriptions of present policies. In Chapter VI this concept is expanded to explore the possible consequences of selected alternatives to present policies.

This perspective forces us to view projection error differently from the usual statistical sense. In particular, if our projections are to guide policy formulation, it is essential to avoid catastrophic error in any one year, even at the expense of introducing greater overall error. Let us formulate a more precise definition of catastrophic error. To the extent that projections are used in policy formulation, the worst result from a set of projections would be to instill State decision-makers and corrections planners with a false sense of certainty. For example, believing that the system's behavior is easily comprehended or that projections provided in September 1977 are more than estimates could lead to gravely unjustified assumptions. In practical terms, we must develop a systematic view of forces affecting imprisoned populations and the sensitivity of those population levels to small changes in these forces. We must also prepare strategies which confront the uncertainty of our knowledge and avoid either gross over or underestimation of the anticipated populations levels. The implied social cost of five-percent overestimation may be quite different from that of five-percent underestimation. The effects are distributed very differently. Errors resulting in under-utilization imply costs to the State, whereas errors leading to overcrowding place a burden primarily on prisoners and corrections employees. Therefore, we must separate positive errors from negative ones, or at least speak of the two differently. Furthermore, we must select sufficiently stable methods to prevent wildly erratic projections from occurring over the five-year time span contemplated.

Both stability and dynamic sensitivity may be difficult to combine in a single model. Suppose we are dealing with a cyclically varying system, similar to that shown in the broken curve of Figure 4.1. Model I reproduces this cyclic behavior. However, estimation errors cause the periodicity to be slightly inaccurate. As a result, after a few cycles the model and the

Figure 4.1

Two Models of a Periodic System



data are moving in totally opposite directions. Model II captures the general linear trend of the data, providing a better statistical fit in the usual least squares sense, but clearly obscures an important part of the system's dynamic behavior. Obviously, a decision-maker attempting to understand the system's response to structural or procedural changes would be better served by the model which reproduces the variability of the system. For a planner who simply extends present trends, the straight-line estimation of Model II may give better results. Each model is designed to serve a particular purpose and must be evaluated on that basis. Both are useful; neither is adequate by itself. The projection devices discussed in this chapter share many of the features of the straight line extrapolations of Model II. They are essentially policy-blind extrapolations of the effects of recent past trends, and assume that no dynamic reversals of these trends will occur. While they thereby lose the ability to deal with possible system responses, they are less subject to the kinds of timing instability illustrated in Figure 4.1. In Chapter VI we attempt to develop a more responsive model which reproduces the more complex dynamic bahavior shown by Model I, but which also shares some of its instability and sensitivity to estimation errors in defining the system. In this model decision-makers are allowed to examine the consequences of their last action before choosing the next one. The model thus explores the ways in which policies evolve and adapt to changing situations, and the ways in which the behavior of one component of the criminal justice system is influenced by changes in others.

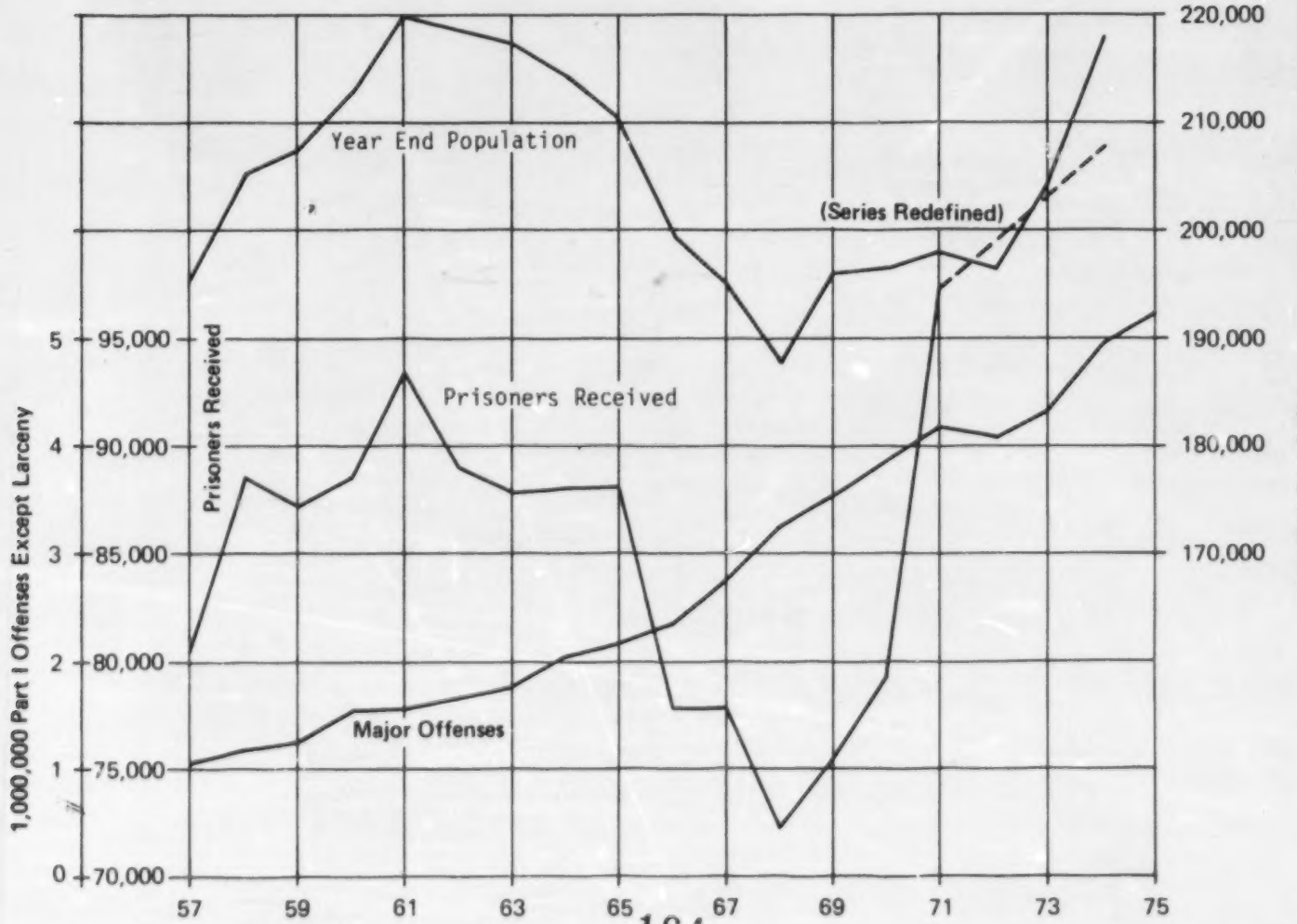
Implications of the Data

Before turning to the projection methods we have chosen, it is important to comment on some alternatives commonly used for this analysis. Figure 4.2 shows the historical trend of correctional admissions in the Federal and State prisons over the last 20 years. A number of conclusions may be drawn from examining these time series.

- A linear model applied over any portion of the curve would result in serious error for most of the remaining curve. As an exercise, we applied a simple trend analysis to these intake rates, for a crude indication of their stability over time. Suppose, for the moment, that we had attempted such an analysis in 1972, and our efforts were confined to estimating intake rate for 1974 (which was, in fact, 89,243 inmates sent to State prisons from the courts). Had we used the trend of the previous five years, the projection would have been 89,366, very close to the correct value. Using 10 years' data, the estimate would have

Figure 4.2

Inmates Received and Present at End of Year, State and Federal Institutions



been 67,500. For 15 years of the series, an estimate of 68,738 would have been received. Therefore, the longer trend data would yield far worse results than the short-term data. In 1972, a reader would not have known the correct value and, confronted with the choices, might easily have interpreted the similarity of the 10- and 15-year results as indicative of greater accuracy. The lesson is clear. Naive dependence on past trend results in serious error, and if the past trend spans enough discontinuities, hidden instabilities in the data may be masked entirely.

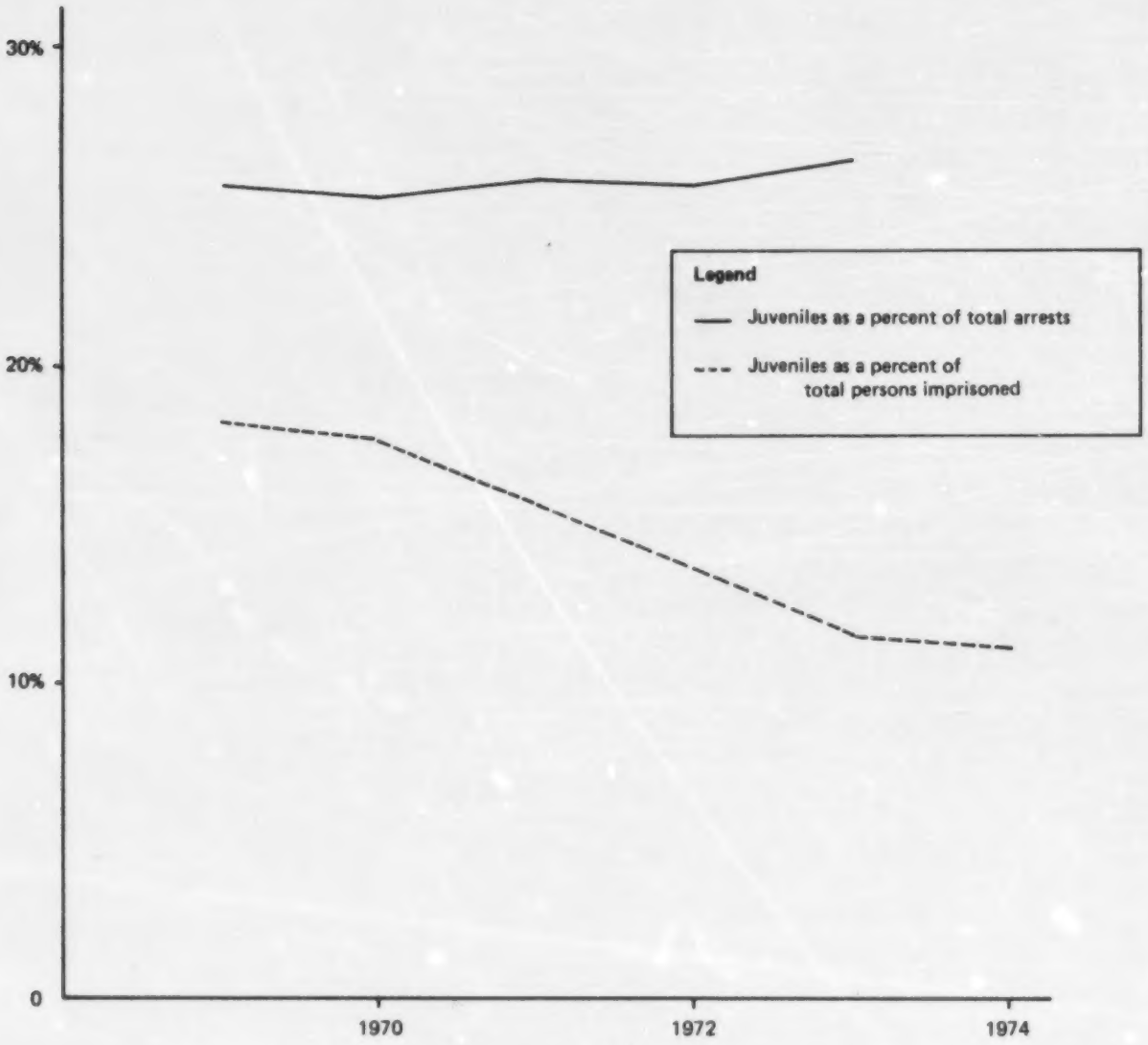
- Recent portions of the curve are marked by major discontinuities. They may involve changes in reporting practices, in addition to actual admissions. M.H. Brunner found that the accuracy of his regression equations was markedly improved by including, during this period, a variable to compensate for changes in the reporting of prisoner statistics.[1] Therefore, we must be cautious of projecting artifacts caused by data acquisition or reporting by examining the context in which the reports are developed.

- The volume of major crimes commited (the variable most plausibly related to prison admissions) is plotted on the same graph. Its influence, if any, is highly obscure. During a period of rising crime rates, the prison population rose, fell, and rose again, without any obvious reference to the number of crimes. If we examine the fraction of juveniles arrested and imprisoned, the complexity of the relationship betweem crime and imprisonment becomes even more evident. During the period shown in Figure 4.3, a deliberate policy of deinstitutionalization was, in effect, outweighing any possible impact of crime or arrest. Such disparities warn that simple one-cause models--especially those that ignore the role of new policy--appear to be of negligible value in describing the phenomenon represented in prisoner movements and prison population levels.

- A major change in policy could produce the sharp, sustained discontinuities experienced in 1966 and 1971. A cumulation of essentially random individual decisions could also produce such discontinuities. In either case, any model attempting to use prediscontinuity policy information for projection would be badly in error.

Figure 4.3

Arrests and Imprisonments of Juveniles as a percentage of totals 1969 - 1974

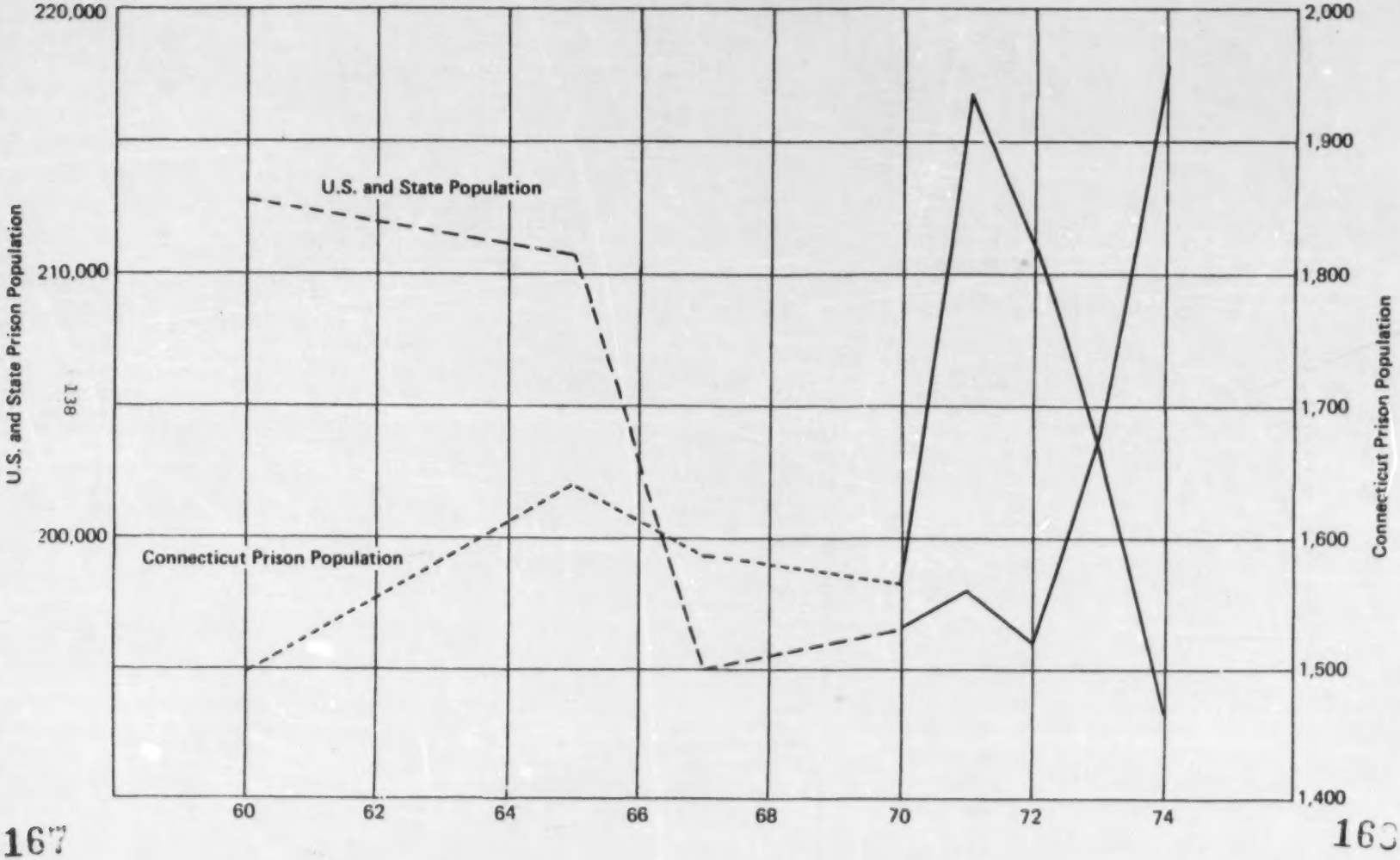


Source: Uniform Crime Reports for 1975, and Sourcebook of Criminal Justice Statistics, 1976.

Figure 4.4

Year End Populations in the State of Connecticut

Source: (National Prisoner Statistics)



- Even within the United States, trends in the aggregate may vary greatly from those in the States. Figure 4.4 shows the total United States inmate population and the number of inmates in Connecticut State prisons. The populations show no resemblance during the past 15 years. Any kind of reliable projection requires at least some understanding of the idiosyncratic history of each State's correctional population, and the jurisdictional, definitional, and policy changes that may be reflected or concealed in the data.

Review of Projection Techniques

The projection techniques previous researchers have applied to estimating prison populations can be grouped in three broad categories (corresponding to the factors assumed to dominate the prison populations):

- Capacity models predict (approximately) stable populations, reflecting society's physical (and perhaps social) limits on incarcerating offenders.

- Flow models estimate rates of admission and release and project changes in prison populations resulting from these estimations.

- Leading indicator models seek variables that (a) can be predicted, and (b) have a predictive relationship to either prison populations or intake.

In seeking techniques for this study, we examined a number of representatives from each of these classes. The case studies provided extensive and detailed data over long time periods. Candidate techniques were applied to present data from these States and to past periods, both recent and distant.

This testing procedure attempted to answer two questions. First, if the technique had been used in the past, how closely would its results have fit the data? Second, were the projection's assumptions logically consistent with the case studies' findings on the operating characteristics of the States' criminal justice systems? Rarely were results simple yes-or-no decisions. Each projection method has some logical merit, and assumptions of each method were more nearly fulfilled in some States than in others.

For example, the capacity-based projections suggest that the populations of single institutions would remain relatively stable, in the absence of new construction or renovations. Over the last decade, the Iowa State Prison at Anamosa's population varied from 1067 in 1967 to 570 in 1974. From the end of World War II through 1967, the population never fell below 1000. The physical capacity for housing this many inmates must therefore have been available even when unused. That prison administrators were willing to phase out some cells indicates a flexibility in the operational meaning of capacity which substantially reduces the predictive power of this model.

It is clear that "capacity," as applied to prisons, has a flexible definition. When Illinois built Stateville Prison in 1919, it was designed to hold 1392 inmates. The last year its population was at that level was in 1929. Throughout most of the prison's 58-year history, the population has fluctuated between two and three times this official design capacity. A Federal consent decree has finally stabilized the institution's population at 2700, twice the design capacity.

Models that postulate general stability in the fraction of the population imprisoned at any given moment are closely allied to the capacity-drives-population school of thought. From this assumption, Blumstein, Cohen, and Nagin developed a second-order, auto-regressive time-series model for the prison population.[2] In their model, the key variable was the ratio (R) of prisoners (P) to total population (T). The form of this model was

$$R_{t+1} = aR_t + bR_{t-1} + c + error_t$$

where a, b, and c are emperically estimated parameters

This formula is equivalent to predicting next year's ratio on the basis of two facts: (1) the present year's population, and (2) the trend in growth (or decline) from the previous year to the present year.

In our case study States, this model did not provide a significantly better fit than the simpler model:

$$R_{t+1} = aR_t + c + error_t$$

which used only the present imprisonment rate as a predictor of next year's rate. Both of these auto-regressive models provide statistical fits capable of explaining approximately 90 percent

of the data's variance.* The estimates from several model runs range from .83 to .92. Therefore, the model predicts that next year's population is a function of this year's and that the two are nearly equal.

Such a finding had considerable intuitive appeal. Fewer than 25 percent of the inmates are released during their first year. Median times served are never less than two years. Thus, between 50 and 75 percent of the inmates present for one year-end count will be there the next year. The coefficients of the auto-regressive model, therefore, embody the real physical continuity of inmate populations.

Although this is theoretically pleasing, it does not provide useful predictions. Elaborate statistical models are unnecessary to inform us that most of this year's prisoners will remain next year. We next ask whether the auto-regressive models can provide information on prison population changes. Models similar to those described above were applied to the annual changes in inmate count and ratios of inmates to the general population. The performance of the auto-regressive models was substantially worse on this more difficult question: In the simple auto-regressive model, 85 percent of the information in the raw data, as measured by the R^2 statistic, was captured by the equation. In the differenced model, only 15 percent could be explained. With the number of estimate-based observations, the time series models were not significantly better than estimations of year-to-year changes as a constant, plus uncorrelated random disturbances.

Flow Models

The same time-series techniques were applied to the rates of intake (both in the aggregate and as components) and to releases with generally similar results. One further elaboration was added. Recent generalizations of time-series methods have incorporated multivariate statistical techniques to allow an estimation of models with more than one series. The Iowa case study provided extensive series of both monthly and yearly statistics on new count commitments, returned parole violators, prisoners released on parole, and releases through expiration of sentence. These four series were subjected to a combined analysis in which each series was expressed as a function of its own past values and of the past values of the other three series.

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* The exact R^2 varies slightly depending on the State, the time period used, and the number of data points.

The particularly interesting question addressed by this approach is: Does an anticipatory relationship between intake and release exist, and if so, what is its lag? The capacity-drives-population concept would suggest a rather short lag, with parole releases accelerated or slowed to compensate changes in court intake. An alternative model would expect releases to lag intake by an amount approximating the average sentence served, i.e., roughly two years.

The Iowa data provides little support for either view. Using yearly data from 1941 to 1976, the estimated model for three of the four series was the familiar first order, auto-regressive function: court intake tomorrow will approximate court intake today; parole releases tomorrow will resemble those of today; and the number of prisoners released on expiration of sentence is best modeled by its own previous value. The only exceptions to this simple rule are the parolees returned for technical violations. The estimation technique finds a significant* relationship between the present number of technical violations and the number of parole releases in the immediately preceding year.

Interestingly enough, if the series is truncated to exclude the 1970s, this lagged relationship is no longer identified. As readers of the Iowa case study will recall, during a brief period in 1972-73, the parole board experimented with a substantially higher release rate. In the face of adverse public response, triggered by a particularly notorious crime of which parolees were accused, the parole board rather quickly returned to more stringent policies. The statistical model appears to have detected this phenomenon. Its predictive value, however, is doubtful. Several informed persons in the State corrections system expressed the belief that this particular pattern is not likely to be repeated in the near future. The lessons of those years are apparently well remembered.

Leading Indicator Models

Two major candidates from the leading indicator models were explored, using, respectively, demographic and unemployment data as candidates for predictors. In a sense, the stability model that uses the ratio of inmates to total population might be treated as a leading indicator method. Other demographic methods attempt to refine this by defining subsections of the population known to have unusually high rates of incarceration and

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* Because we are not in a position to stipulate a hypothesized stochastic model for errors in these series, the term "significant" must be interpreted to mean "with approximately 95 percent confidence."

using them as predictors of the prison population. For this study, the relationship of two subgroups of the population, young adult men and young adult black men, was explored.*

Both studies had disappointing results. Over the comparatively short time span of the last decade, the changes in prison population have been too rapid and abrupt to fit any simple function of the demographic distribution. Since 1960, the ratio of inmates to population at risk declined steadily in Iowa, increased in South Carolina, and fluctuated in Illinois. Using the post-war Iowa time series, a statistically significant correlation between the number of inmates and the population at risk is found. Unfortunately, for both variables, the simple correlations are negative. If a regression model is used to remove the common effect of a simple linear growth trend from the two series, the correlations vanish. Moreover, the imprisonment rates are statistically less stable than the prison populations per se. The coefficient of variation** of the rates is roughly twice as high as for the number of inmates.

Unemployment rates had been used in previous exploratory studies at the national level. These studies had shown a substantial coincidence between unemployment and the number of inmates in Federal prisons. Unfortunately, these results, seemingly significant at the national level, were not supported by the data from our case study States. For this analysis, Statewide annual unemployment rates from 1970-75 were tested against intake and numbers of inmates. Data from California, Illinois, Iowa, Massachusetts, and South Carolina were used. The observations from these States were pooled in an analysis of covariance model. The correlation between intake and unemployment was 0.0478 (df = 21, p = 0.4). The correlation between inmate population and unemployment was 0.0425 (df = 21, p = 0.4). Both these correlations were so near zero as to afford no practical help in projection.

Projection Assumptions

From our experience in applying this range of techniques to data obtained from the case study States, a number of conclusions emerged. These formed the basis for our choice of methods to be used in making policy-free projections. The first conclusion resulted from our inability to find an effective method for anticipating the sudden policy shifts which periodically overtake the system. Once such a turning point had been reached and

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* For convenience, "young" is defined as between 20 and 29 years of age.

** Ratio of standard deviation to mean.

passed, it could be noted as a discontinuity in the series; until its occurrence, however, there was no basi in available data for predicting a change.

When policies were shifted, knowledge of parole or sentencing practices before the rule-change provided no improvement in the accuracy of short-term estimations. This fact, together with the observation that small rule-changes were occurring every year, was reflected in the autoregressive models' tendency to rely only on the single most recent observation for their estimates. Thus, on both logical and empirical grounds, we restricted our choice of projection methods to those relying primarily on the current prison population levels, rather than to those employing exogenous indicator variables.

A second observation from the case study States was that intake rates appeared to change either very abruptly--almost discontinuously--or negligibly. It was easy to find step functions in the series; it was impossible to identify trends with any confidence. In addition, no readily accessible variable served as an acceptable leading indicator for the intake rate. Given these limits to our knowledge, we would not anticipate the next change in intake.

Instead, we chose to examine the consequences of a policy which continued the present intake rate, although we were fairly certain that present rates of intake would not be maintained in all States. Knowing only that changes would occur, but not their magnitude or direction, the "no change" assumption was selected as the least improbable of an infinite range of improbable choices. Because the projections are policy blind, they do not attempt to deal with the probability that departures from the basic assumptions will take a particular direction or produce effects of any determined amount. If it is assumed that changes of increasing and decreasing severity are equally likely, these policy-blind projections can be taken as maximum likelihood estimates of the prison population. Knowledge of possible policy changes which may affect the imprisonment levels is taken into account in the projections of Chapter VI, but not those of Chapter V.

In addition to consistency with these observations, we imposed a third requirement on our projection methods: They must be simple to state, apply, and correlate with policy actions. Thus a simple model showing the system's workings was preferred over a complex model which obscured them. As it happened, none of the complex models explored had any predictive superiority to the simpler, intuitively-motivated models that were employed.

Projection I: Constancy

In selecting a theoretical basis for applying a projection technique, one seeks some attribute of the system which can be treated as invariant throughout the relevant past, and expected to remain so throughout the projection period. The various projection methods discussed above can be associated with postulates about the nature of this invariant, so that selecting a projection technique is equivalent to selecting a set of assumptions about structure. The simplest of these assumptions is that the number of inmates is invariant. This assumption has some plausibility: If we accept the hypothesis that prison capacity controls population, or only that it imposes an upper limit, then over a broad range of conditions (probably including those of the last 10 to 20 years) the level of population should be roughly constant.

The constancy will, of course, be expected to be only rough because every model assumes the presence of some random disturbance. Proponents of this view would argue that the growth of the last few years falls into the category of random disturbance, and therefore, there is no basis for expecting its persistence. They would point to previous periods showing growth of comparable magnitude, such as the late 1950s, which culminated in higher levels of incarceration than those in many States today. Over a sufficiently long historical interval, these States do indeed seem to have relatively constant, or at least trendless, prison populations. Our experience in the case study States has revealed mechanisms which apparently contribute to this stability: Iowa's preference for community corrections may have provided an alternative to increasing imprisonment, written orders for accelerated release due to crowding in South Carolina, and Federal court orders fixing institutional capacity in Mississippi and one Illinois prison.

Whether the past fluctuations of prison population have been consistent with this underlying stability depends both on the length of time over which they are examined and on how narrowly one defines stability. Over the entire twentieth century, the aggregate prison population has shown no clear trend except that reflecting the general growth of the nation's population. Over short periods within the century, including the years from 1972-76, there have been seemingly persistent trends, always heretofore reversed sooner or later.

The assumptions leading to a roughly constant prison population estimate are not complicated. If the supply of potential prisoners (i.e., convicted offenders) is large by historical standards (as it has been during the recent years of rising crime rates),

there will be upward pressures on the level of imprisonment. However, each added inmate day imposes some cost on the State for care and custody. The simplest of economic models would suggest an equilibrium position, at which the marginal cost of imprisoning the next inmate balanced the society's preference for imprisonment. Under this set of assumptions, prison populations will remain constant except (a) when the marginal cost changes, or (b) when social preferences for imprisonment change. Positing a constant prison population then implies no change in either these preferences or costs.*

In practice, both are subject to change. A new prison, once constructed, lowers the marginal cost of imprisonment and, under this model, will raise the equilibrium number of prisoners. Conversely, obsolescence of existing institutions, provided it is perceived by policy makers, should raise costs and lower populations. References are likely to change in response to changes in crime rates, or more accurately, to changes in perceived crime rates, which are likely to lag behind actual changes and to contain systematic biases.

There is also a purely technical appeal to models that involve constancy of the prison population. The number of inmates in October is not determined anew from October's costs and social preferences. Most people imprisoned in October were also imprisoned in September. Simple though this fact is, it allows us to develop the beginnings of a useful quantitative theory for exploring the time series data and for interpreting the parameters which are estimated through time-series modeling.

$$P_{t+1} = a\,P_t + b$$

where P_t is the population at time t,

a is the fraction remaining, and

b is a constant influx (or egress) of prisoners independent of t.

This form is the well-known first order auto-regressive model of a stationary process. We can apply some general theoretical results for all such models to the prison population. Perhaps the most interesting is that every such model has an equilibrium point toward which the series tends to move. In this notation, a stable prison population occurs whenever

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* Excluding the rather unlikely contingency of exactly countervailing changes in both.

$P_{t+1} = P_t$, that is, $P_t = a P_t + b$. Solving gives $P_{stable} = b/(1 - a)$. Hence, for any $a \neq 1$, and for any b, there is some stable population level, to which the assumptions of the model imply return. The condition $a \neq 1$ makes estimation of the parameters particularly important because it provides a test of the predictability of the series. The more nearly a approximates 1 in the data, the more volatile the prison population, and the more persistent will be small departures from equilibrium.

In the case study data, these returns to stable levels seem to occur once or twice per decade and to take the form of abrupt discontinuities. The South Carolina State Corrections Department assumed jurisdiction of prisoners serving terms over three months; Illinois introduced a new form of conditional release increasing the number of paroles; Iowa raised its parole rate for two years and then reversed its policy; Mississippi had Federal court intervention. Assuming similar reactions to extreme population also occur in other States, we might expect that by the end of 1977 at least half a dozen States would have departed significantly from their recent historical trends. By the end of 1982, many States will have experienced at least one such discontinuity. Since the assumptions of the model say nothing about which direction a policy change will take (or about its magnitude), many of the projections for 1982 derived from linear extrapolation will be based on false assumptions, and will therefore contain errors of unknown direction and magnitude.

Moreover, at this point we cannot predict in which States these discontinuities are likely to occur. In every historical instance, plausible causes have been advanced to account for the abrupt changes: courts, prosecutors, parole boards, governors, and legislators. In general, it is safe to state that, had the changes occurred in other years, or in other directions, equally plausible explanations could have been produced. In most States, at most times, some variable which could explain imprisonment increase or decrease is changing. Unique events are so frequent that their predictive power is weakened.

Projection II: Constant Flows

In our case studies, we find the rate of parole release often subjected to large discontinuities. It can rise or drop, sometimes by as much as 50 percent, within the span of a single year. Compared to these abrupt policy changes, neither year-to-year variation nor trends between steps appear significant. Less

frequently, intake variables show similarly discontinuous behavior. Over a span of time long enough to include one or more of these discontinuities, prisoner movements are clearly not good candidates for the central invariants of a model. Between discontinuities, however, it is possible that rates of intake and exit hold roughly constant levels. By an obvious tautology,

$$P_{t+1} = P_t + I_{t,\,t+1} - E_{t,\,t+1}$$

where P_t is the number of inmates at time t, as before,

$I_{t,\,t+1}$ is intake between time t, and time t + 1,

$E_{t,\,t+1}$ is exits over the same interval.

Since this projection assumes constancy of both intake (I) and exit (E), and hence of their difference, the result is constant linear growth or decrease. In the special case where I = E, Projection II reduces to Projection I. In any other case, Projection II eventually becomes an absurdity, since linear extrapolations must eventually run to plus or minus infinity. Clearly, long before that day arrives, some departure from linearity, either as a discontinuity described above, or as a functional change, will occur.

At any time, a number of proposed policy and administrative changes are being considered in each State. Each of these changes could influence prison populations in one direction or the other. The manner in which the changes are implemented could also influence prison populations. Of the many changes proposed each year, a few are implemented with vigor. Some of these changes reinforce one another; some counteract one another. Occasionally, changes that are implemented, alone or in combination, influence populations dramatically. However, one cannot accurately predict which of the many proposed changes will be implemented, or the precise quantitative effect on prison populations that various combinations of proposed changes will have, if implemented.

Projection III: Constant Sentences

The third projection method assumes (as does Projection II) that intake continues at its present rate. Further, it requires that releases will follow admissions at a constant lag, so that sentences served will remain at approximately their present level. In States for which time-served data are available, lags estimated from sentence data correspond, within one or two months, to lags estimated from intake and release rate data.

The projection estimates the lag between exit and intake, on the basis of 1976 exits (excluding releases other than parole and expiration of sentence). It then calculates projected future populations, assuming that this same lag will apply throughout the projection period. Like Projections I and II, the assumptions of this projection method may fail. While some States have shown stable intake over recent years and others may now be leveling, we have just experienced a period of rising court commitments. It is highly plausible that some States will continue to show this increase. Others may show decreases in total intake. Moreover, even where the intake assumption is met, sentences may become longer or shorter, destroying the assumed relationship between intake and exit.

The projections in the next chapter are based on 1976 data. The projection period ends in 1982. With sentences between two and three years, this means that the last projected point is two or three prison generations removed from the most available data. Projected intake and release are both dictated entirely by the assumptions of the method from 1980 through 1982. This dependence of projections on assumptions is equally true for all projection methods; however, the brevity of actual prison stays, compared to the six-year projection period, dramatizes the remoteness of all of our estimates (especially for the latter half of the period) from actual data.

Limitations of Projections

Each of the projections printed is, in a sense, error free. The respective methods stipulate the constancy of some observed behavior, and project the consequences of that assumption. On an "if..., then...." basis, the projections are mathematically true. The problem, of course, is that the "if's" of any particular projection can never be exactly true.

Essentially, there are two ways in which reality and our assumptions differ. The first is comparatively simple statistical noise. The arrival of cases from court, or their departure upon release, can be viewed as a random process described by statistical parameters. Once the gross yearly rate of arrival (departure) is fixed, either assumption or by projection the random process can be adequately described by specifying an event's probability during each short unit of time throughout the projection period.

To a first approximation, it can be assumed that this event probability is a constant over all periods within a year. This description is not strictly true: events cluster to reflect vacations and weekends, days when courts are in session, and seasonal workload factors. The statistical effect of such clustering is not large, however, and, for purposes of these calculations, may be ignored.

With this simplifying assumption, and our projection assumptions of constant intake rates--and hence a constant probability of each independent event--we can approximate the random portion of the intake decision by a Poisson process. Assuming that yearly intake is a random variable drawn from a Poisson distribution with mean I, the standard deviation of intake will be $\sqrt{I}$. Further, assuming that the release process is similar to intake, the standard deviation of exits will be $\sqrt{E}$, where E is the mean of the yearly exit rate distribution. By elementary algebra, the standard deviation of I - E, the net population change, is

$$\sqrt{I + E - 2 \text{ cov } (I,E)}$$

where cov (I,E) is the covariance of intake and exit within a year. For the present calculations, we have assumed cov (I,E) = 0, which leads to conservative estimates of the standard deviation.

Each additional year's projection is the accumulation of projections for prior years, plus flows for the present year. Thus, it contains all the error of the preceding years plus the contribution of the present year's flow. Under our projection assumptions, the flows themselves, and hence their standard deviations within a year, remain roughly constant through 1982, so that the variance grows linearly with time. In addition, the standard deviation of the population estimate itself increases as the square root of the number of years.

The second form of error which can be expected is not easily estimated. The parameters assumed as constant will not remain constant through all time. They will increase or decrease to reflect changes in policy. If court processing rates suddenly increase, an intake spurt may follow. If sanction levels become more severe, exits may slow. The projection's assumptions that these parameters can be predicted from their past values are likely to be invalidated from time to time.

Even without deliberate policy changes, some change must occur in at least one of the three variables: sentences, intake rates, or exit rates. If intake rates remain constant (as assumed by Projection III) and sentence lengths also stay at their present levels, the rate of release cannot remain constant (as assumed by Projection II), since releases must approach and eventually equal intake after an appropriate lag. Conversely, constant flows (assumed by Projection II) imply a changing average sentence (contrary to Projection III). This is most easily seen by considering the fact that an inmate arriving to serve a five-year term represents five person-years of custody. A steady flow of such arrivals means that the number of persons in custody approximates the average effective sentence times the

intake flow. When the number of persons in custody rises (as it does in Projection II) while flows remained constant, the average sentence must increase.

As a result of these facts, the assumptions of Projections II or III are mutually inconsistent except in the steady state assumed by Projection I. Intake, exit, and sentence can all simultaneously remain constant only if population also remains constant. Therefore these policy-blind projection methods themselves force on us the conclusion that some policy changes will occur, simply because of the mathematical impossibility of continuing "business as usual" indefinitely.

The Need for Policy-informed Projections

Although black box trend projections may prove to have been accurate predictions after the fact, most decision-makers are uncomfortable using them as a basis for action. If the past performance of a system is not understood or explained, then its future cannot be confidently predicted.

In this study, this principle creates a premium for understanding the effects of policy decisions on correctional populations. Focusing for a moment on the notion of discretion as a specific form of policy action in the criminal justice system is useful.

One underlying feature of the major innovations that characterized the present decade of criminal justice programs is the exercise of discretion. Court cases and guidelines have helped to define the discretionary roles of arresting officers, prosecutors, and judges. Diversion and screening programs have been instituted to formalize and channel the discretion of these actors and to allocate both community and criminal justice resources to selected defendants or offenders. Patrol allocation and enforcement strategies reflect either implicit or explicit exercises of discretion. Parole boards are developing new kinds of supportive services and new concepts of due process to improve their ability to make sound release concepts of due process to improve their ability to make sound release decisions. Emerging from this brief catalog are two important factors. First, many of these innovations may have major effects, not fully anticipated, on the imprisoned population of the United States. Second, the decisions regulating both the influx and departure of prisoners are largely exterior to the institutional-corrections component of the criminal justice system.

In light of these factors, the population situation confronting many of the nation's correctional agencies acquires a special significance. Correctional administrators have no control over a rapidly accelerating number of prisoners flowing in and out of the system. The corrections administrator has some control over the security classification of inmates, and limited ability to reallocate space within an institution, but has no control over the amount of prisoners entering or the length of their stay. Under such circumstances, the corrections specialist sees prison populations as determinate, an externally defined natural phenomenon which can be tabulated, possibly anticipated, but not controlled. From the broader perspective of the entire criminal justice system, this deterministic view appears as an anomaly. The existing population of our prisons is a direct result of decisions to put people in and take people out. Many of the individual decisions may be made in disregard or ignorance of their eventual impact on the prison population, but the aggregate reflects implementation of either implicit or explicit policies. These policies control the size of the prison population, and the projections in this study must consider these decisions.

Entire meanings of parole and rehabilitation in prison are being rethought. The concept of the sentence is being given new definition. A significance of these policy debates concerns determinate sentencing. The intent of such schemes is often to adjust sentences thus, leaving average prison stays unchanged. In general, no clear guarantee states that such adjustments will have the intended consequences, nor that the intended changes can be implemented in practice. A more interesting problem, however, is the potential structural impact of changes in sentencing on the stability of the prison population. Parole now serves as a mechanism for regulating the size of the institutional population. The delay between a parole decision and the inmate's release can be as small as a few days. Through the informal evolution of the corrections system, the rate of parole granting has become a device capable of fine-tuning the size of the institutional population. Parole can fairly quickly respond to conditions of severe overcrowding. With a trend toward determinate sentencing, and the abolition of parole, the delay between the release decision and actual release abruptly expands from days to years. The kind of immediate adjustment provided by parole vanishes, leaving a corrections population whose size depends on decisions made months or years ago instead of on responsive population-control mechanisms. In systems-analytic terms this means that the stabilizing influence may suddenly pass a crisis point and begin to cause major instability. For example, while average daily population remains unaffected, the size of fluctuations in the population becomes grossly magnified, possibly resulting in transient periods of grave overcrowding interspersed among periods of facility underutilization.

The dynamic consequences extend beyond the corrections systems as changes in sentencing and release practice begin influencing plea negotiations and trial proceedings. Since these actions will be affected by factors such as expected length of stay and will, in turn, influence the number of people sent to prison on any given sentence, a complex interplay between the corrections system and the actions of legislators, prosecutors, and courts begins to emerge.

The trend extrapolations discussed above have two crucial limitations on this complex environment. First, they are generally inflexible in dealing with the ways policies of other actors may change in response to a changing correctional situation. Secondly, the trend extrapolation can accommodate changes in corrections policy only in the form of fairly detailed assumed sets of parameters which are selected to reflect presumed consequences of the new policies. The problem of selecting these new parameters is usually as difficult as the original projection, and the trend extrapolations give little guidance for this task.

In providing criminal justice decision-makers with any useful guidance in selecting policy, the black box of the trend-projection techniques must be supplemented with a policy-informed projection device allowing us to observe and manipulate numerical quantities and the structure of the simulated system. As the most appropriate mechanism for constructing such a model, the application of techniques known collectively as "dynamic modeling" was selected.

Dynamic Modeling is an approach to complex social systems developed at the Massachusetts Institute of Technology during the past 20 years. As applied to the problem at hand, it provides a means of analyzing the influence criminal justice policies and practices have on the correctional population and other features of interest. Assumptions about the initial magnitudes of the populations and the factors affecting the various flows are built into a central model. The nontechnical reader must understand what such a model is, and more important, what it is not. As used here, models are not predictive tools or scenarios. They are quantitative structures used for organizing and storing information. In this case, the information concerns assumptions about the interrelationships of the elements of the criminal justice system. The models are useful for this general task and, in particular, for keeping in mind groups of relationships that are difficult to integrate and remember. Both conceptually and in practice--since the information is stored in a computer--the models are memory banks.

However, the model and its machine can remember only what they are told to remember by the modeler. For many aspects of the criminal justice system, precise and validated information about internal relationships is not accurately documented. This is a central difficulty in attempting correctional forecasting. There is no agreement, and in many cases no information other than anecdotal, about the causal relationships that these models require. Thus, the assumptions that the author provides to fill these gaps are necessarily informed judgments rather than truly empirical findings. As a general rule, the direction of a relationship can be identified with more confidence than can its exact quantitative magnitude. Accordingly, the results of the model are likely to be of more value for their qualitative indications of the general direction of change than for their numerical estimates of the magnitude of that change.

The Dynamic Modeling approach is considered appropriate to the objectives of a policy-informed projection for the following reasons:

- The model provides a systemwide view of the criminal justice system, with special emphasis on corrections. Thus, the model will permit looking at policies of the correctional agencies and allow analyzing the impact of court and sentencing policies on corrections.

- The simulation provides explicit numerical values for all populations and flows of interest at specified times. Thus, the model generates values for comparison with the past and also provides the required projections for the future. These values are not to be considered reliable forecasts of actual occurrences, however.

- The approach can use all relevant data, whether numerical data or descriptive data, from the literature or from experts in the field.

- The model can easily accommodate alternative scenarios. It will contain explicit representation of the ways in which various policies might influence system operations. To change policies, variables representing the effects of the policies can be explictly inserted in the model, and this has been done as described in Chapter VI. Where informed opinion diverges on the best way to represent important influences, the model can be operated with alternative formulations.

- The model could be constructed quickly and subjected to continuing refinement to improve its usefulness. As the various significant "what-if's" become matters of general agreement, the enhanced knowledge would be incorporated into the model.

- The model will be easily transportable to other agencies and to other situations. Due to its systemwide focus, it should interest a variety of criminal justice agencies at the Federal, State, and local levels. Understanding the approach does not require mathematical expertise. Programmed in the computer language DYNAMO, the model can be transported to a wide variety of computers that can accommodate this language.

The Dynamic Modeling approach also entails certain drawbacks:

- Development of the model requires attention to the interactions among the various components of the criminal justice system. Typically, a system-dynamics model is far more complex than the models used in trend projection techniques.

- Consequently, disaggregating the model into fine categories is often impractical. Therefore, trend-projection techniques are used for detailed forecasts by State and sex of the offender. In this phase of the study the dynamic model could only be applied to those states were sufficiently detailed information was available either from public information or from the case studies.

- The detail of the model usually requires assumptions about causal influences that cannot be readily established. In these instances descriptive types of information are used in the usual process of debate involved in conventional policy analysis.

- Trend projections may, in fact, generate short-term forecasts more accurately than the behavior exhibited by the dynamic model.

Despite these limitations, the Dynamic Modeling approach seems well suited to the only type of policy-informed projection appropriate to this study: a structure of conditional statements that can provide the Law Enforcement Assistance Administration and the Congress with a wide range of alternatives: "If you choose that policy course, this is what will probably happen throughout the criminal justice system and its correctional subsystem." This type of effort is distinguished from one that

attempts to tell the audience, "This is what the future holds." The meshing of the qualitative scenarios and the quantitative modeling is described and illustrated in detail in Chapter VI.

IV. NOTES

1. M. Harvey Brunner, "Estimating the Social Costs of National Economic Policy: Implications for Physical and Mental Health and Criminal Aggression," Study for the Congressional Joint Economic Committee (Washington, D.C.: Government Printing Office, 1976).

2. A. Blumstein, J. Cohen, and D. Nagin, "The Dynamics of a Homeostatic Punishment Process," Journal of Criminal Law and Criminology, 63, 317-334 (1976).

V. POLICY BLIND--PROJECTIONS

In the preceding chapter, we examined some of the inherent logical problems of projection. Projection methods are limited by the validity of their assumptions. There is no guarantee of the limits within which the assumptions used by these methods, or any others, would be valid for any portion of the next five years. This chapter examines the actual data used for preparing these projections. As our limited knowledge of the future weakens our confidence in the projections, our limited knowledge of the past--as reflected in the data used here--further increases our uncertainty.

The initial problem with the data is that already they are at least nine months out of date. The only data consistently available from all States reflect inmates' movements during calendar year periods, as specified by the National Prisoner Statistics. Hence, our most recent population figures refer to December 31, 1976. Prisoner movements are aggregated over the calendar year; therefore, our most recent data reflect events occurring from nine to 21 months before our projections were prepared.

This study was partially motivated by a belief that correctional populations were in a period of rapid change and high uncertainty. As far as this belief corresponds with actual conditions, the information lag imposed by the state of correctional statistics is particularly debilitating. To project 1982's populations, we must begin by projecting 1977's.

The survey for this project was conducted in midyear. In some States, data for the first half or first quarter of 1977 were available; in the case study States they were collected. The data suggested the presence of seasonal trends. In particular, December seems to be characterized by reduced intake, probably reflecting the vacation schedules of courts. Since our only consistent historical series--the National Prisoner Statistics--

used a December 31 reference date, the more recent data (spring and summer of 1977) could not be directly integrated with prior years' data for use in the extrapolations.

A related problem concerns the currency of correctional records themselves. We supplied each State corrections agency with a copy of data they had sent to the Bureau of the Census earlier in the year as part of the National Prisoner Statistics Survey. Half of these forms were returned with corrections of up to 10 percent in individual counts. Since the unchanged forms may have been either accurate or simply not checked, we cannot estimate the total number of States whose current year-end population estimates differ from those used six months ago. Similarly, the number of States whose 1976 estimates will ultimately be revised is also unknown.

The problem of data accuracy extends far beyond minor revisions to correct random errors. For our purposes, systematic events that distort the meaning of the data are far more serious. South Carolina's projections, for example, are based on data that reflect growth partially due to jurisdictional transfers. We were aware of this fact only from the extensive data gathered by the case studies, which warned us against seriously considering the extrapolation results in South Carolina.

There is no guarantee that similar transactions are not involved in the other States' projections presented here. On the contrary, it is highly unlikely that all other State projections are free from distortion. Similarly these policy-blind projections are implausible in States with policies known to have changed since the period described by the data. For example, all past data from California reflect a set of policies that was completely unrelated to the policies envisioned by the flat-time legislation. Chapter VI, which explores in detail this and other kinds of policy changes, clearly demonstrates that such actions' effects on prison populations depend entirely on the manner of policy implementation (which may not resemble the original decision-makers' intentions).

In this chapter, any analysis that the projections can undergo is actually an analysis of the past and the assumed relation between the past and future. A projection showing a five-percent growth rate signifies that the past data are consistent with that rate, not that such a rate characterizes the future.

Projection methods used in this project rely heavily on assumptions about intake and time served. In 1976, the year this study was mandated, all but seven States (see Table 5.1) had experienced higher intake rates in 1975 than in the preceding year. The me-

dian growth rate in intake was 13 percent, and a quarter of the States (see Table 5.2) showed spurts of 25 percent or more.

This tide apparently has abated. In 1976, exactly half the jurisdictions showed intake rates lower than the previous year's. The mean rate of increase was 1.3 percent. Across the nation, intake increased by fewer than 3000 inmates. In 20 States with lower intake, the decrease exceeded five percent (see Table 5.3). Sixteen others showed at least five percent increases (see Table 5.4). This distribution of 1975-76 changes agrees with the hypothesis that no further increase (or decrease) has occurred in the rate of intake.

The evidence on time served is less clear. Actual data on time served are available in only nine States for 1976. (Table 5.5 shows median time to first release in these States.) Only five of these States have data available for a previous year. Such limited information cannot support useful conclusions about changes in sentence length.

Table 5.1

Decreases in Intake 1974 - 1975

for Male Prisoners

State	Intake 1974	Intake 1975	Change
California	11,836	9059	-23%
Hawaii	219	166	-24%
Indiana	2957	2476	-16%
Michigan	6925	6217	-10%
Vermont	239	199	-17%
Virginia	3938	3116	-21%
Washington	2158	1957	- 9%

However, an approximate index can be computed for all States from information on prisoner movements. In a steady State system, the average time served by inmates released will exactly

Table 5.2

Increases in Intake 1974 - 1975

for Male Prisoners

State	Intake 1974	Intake 1975	Change
Arizona	1125	1492	+33%
Connecticut	1272	1832	+44%
Florida	7033	10,164	+45%
Illinois	3550	4615	+30%
Iowa	824	1044	+27%
Kansas	1187	1690	+42%
Massachusetts	1492	1920	+29%
Montana	329	412	+25%
Nebraska	660	836	+27%
Nevada	330	464	+41%
New Hampshire	247	361	+46%
Oklahoma	1963	2483	+26%
Rhode Island	180	227	+26%
Tennessee	2127	2852	+34%
West Virginia	842	1181	+40%
Wyoming	122	176	+44%

Table 5.3

Decreases in Intake 1975 - 1976

for Male Prisoners

State	Intake 1975	Intake 1976	Change
Alabama	2584	1451	-44%
Alaska	220	193	-12%
Arkansas	1990	1707	-14%
Colorado	1643	1494	- 9%
Connecticut	1832	1512	-17%
Florida	10,164	9243	- 9%
Georgia	5739	5070	-12%
Hawaii	166	121	-27%
Indiana	2476	2296	- 7%
Iowa	1044	881	-16%
Maine	786	727	- 8%
New Hampshire	361	263	-27%
New Jersey	4171	3903	- 6%
Ohio	7495	7034	- 6%
Oklahoma	2483	2205	-11%
Pennsylvania	4728	4448	- 6%
South Carolina	4370	3793	-13%
West Virginia	1181	965	-18%
Wyoming	176	163	- 7%
Washington, D.C	3902	3683	- 6%

Table 5.4

Increases in Intake 1975 - 1976

for Male Prisoners

State	Intake 1975	Intake 1976	Change
California	9059	11,041	+22%
Illinois	4615	6072	+32%
Kentucky	2488	2760	+11%
Mississippi	2150	2490	+16%
Missouri	2425	2603	+ 7%
Montana	412	466	+13%
Nevada	464	494	+ 6%
New Mexico	731	841	+15%
New York	8766	9418	+ 7%
Rhode Island	227	303	+33%
South Dakota	358	387	+ 8%
Texas	9538	10,207	+ 7%
Utah	545	665	+22%
Vermont	199	289	+45%
Virginia	3116	3629	+16%
Wisconsin	1705	1849	+ 8%

Table 5.5

Median Time to First Release

State	1976
New Mexico	12 months
New Hampshire*	11 months
South Dakota*	10 months
North Dakota	10 months
Oregon	16 months
Rhode Island*	18 months
Utah	25 months
West Virginia*	21 months
Wyoming*	17 months

*Includes time to re-release for technical parole violators.
Source: National Prisons Statistics

equal the ratio of the number of inmates to the number of releases. Fluctuations in rates of arrival and departure will cause true time served to differ from this ratio. The index can still be used for comparisons, although it may not reflect literal sentence lengths.

In 1975 the median value of this time-served index was 20.5 months. A quarter of the States fell below 15 months. The next year's values increased about one month. The median was 22 months, and the first quartile was 16 months. This increase is statistically significant at the 90-percent confidence level. Since an unusually large number of prisoners were received a year earlier, a shift of this magnitude could reflect merely

* Each inmate in custody represents a person-year of incarceration. In a steady state, this number of person-years is supplied by one year's flow (in or out) of persons.

transient phenomena. When the population is increasing, the index is no longer strictly equal to the expected sentence. Until further time-to-release data are obtained, we cannot determine whether the observed phenomenon reflects a small increase in sentence length or merely an artifact of the prior year's rising intake.

Projections of Present Trends

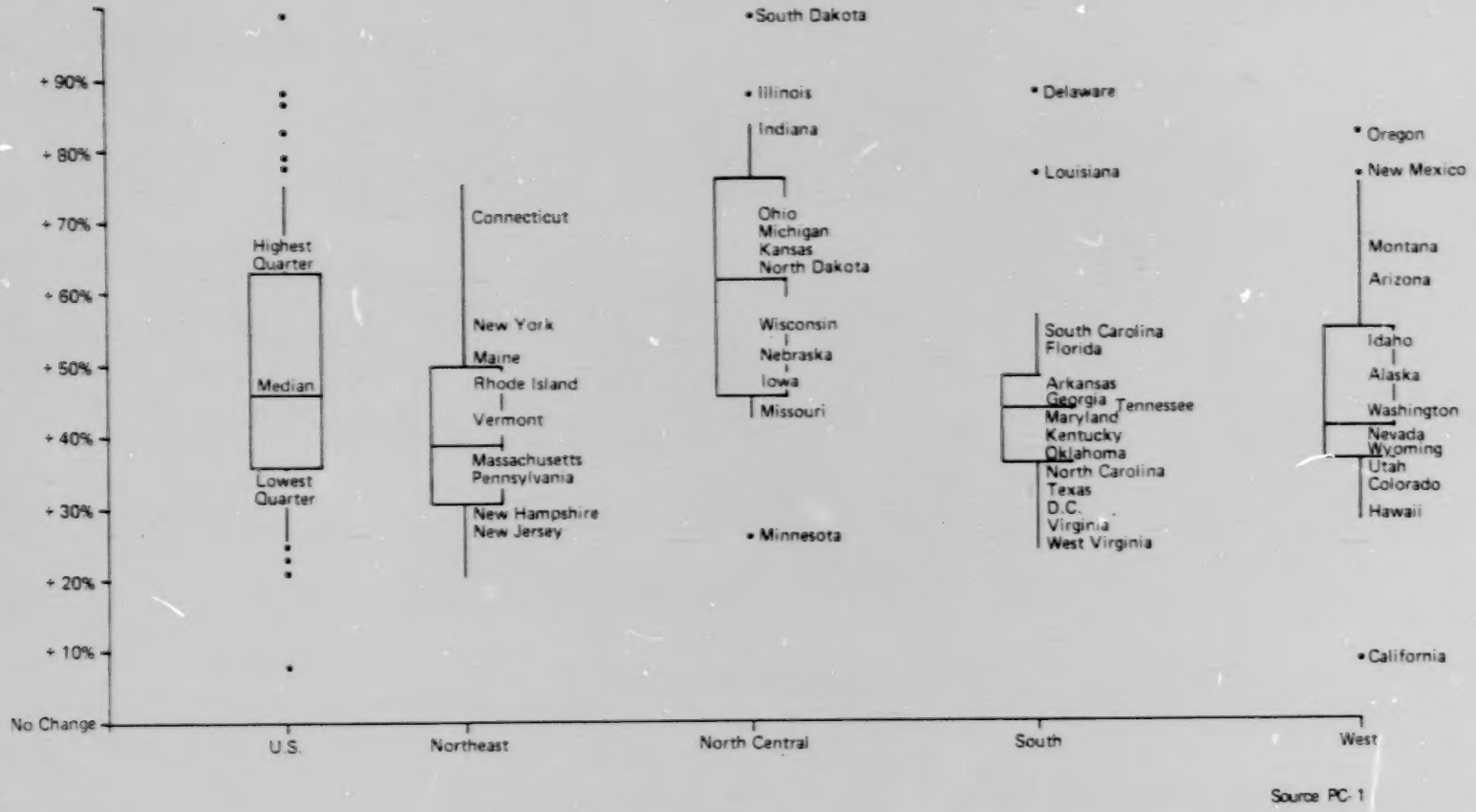
Detailed tables showing the yearly populations of State and Federal prison systems under each of the projection methods discussed in Chapter IV are provided in the technical appendix to this report. Table 5.6 summarizes these results for the total numbers of inmates projected for December 31, 1982 on the basis of 1976 data. Projection I, which may be taken as a base for comparison, assumes long-term stability in the total imprisoned population. Projection II assumes that present levels of admissions and releases persist over the next six years. Projection III also assumes persistence of present admission levels, but computes the expected population on the assumption that time served remains constant.

The column of Table 5.6 headed "Error" tabulates the 95 percent confidence interval computed on the premise that the basic modeling assumptions of the respective projection methods are statistically valid. It does not reflect any uncertainty which may be introduced either by misspecification of the assumptions or by the prospect that States will change their policies to invalidate one or more of the assumptions. In most States, the results of Projections I and III differ by less than this 95 percent error bound, while Projection II is generally above this limit.

In Figure 5.1 we show the distributions of growth rates (as projected by Method II) for the States in four major geographic regions. These projected growth rates may be interpreted either as the changes expected over the next six-year interval (assuming unchanged intake and release levels) or as the recent historical trends. As a region, the North Central States show the highest distribution of growth rates. The projected increases in the four major industrial States--Illinois, Ohio, Michigan, and Indiana--are all above the median for the region, and in the top quartile for the United States as a whole. Since all of these States had comparatively large prison populations at the beginning of the period, their growth has been a major contribution to the aggregate national growth. In 1974 these four States housed 27,180 inmates, or 14.5 percent growth. In 1974 these four States housed 27,180 inmates, or 14.5 percent of all State prisoners. Over the next two years, this number grew by 31 percent, to 39,400, or 17 percent of the national total. Over the last two years, these four States alone have contributed 27 percent of the total increase in inmates of State prisons. In Projection II, which assumes continuation of these trends over the next six years, these four States are expected to continue annual growth rates averaging 9.8 percent.

Figure 5.1

Projected Prison Population Increase, 1976 - 1982 (Projection 2)



Source PC-1

Table 5.6

Projected Number of Inmates with Sentences Over One Year on December 31, 1982

Jurisdiction	Projection I	Projection II	Projection III	Error
Federal Prisons	26799	34428	28700	1528
Alabama	3033	1710	1262	344
Alaska	231	344	179	119
Arizona	3044	5004	3132	329
Arkansas	2432	3648	2287	355
California	18112	19827	20358	897
Colorado	2239	2929	2296	327
Connecticut	1922	3300	1768	340
Delaware	685	1282	732	172
D.C.	2220	3017	2359	413
Florida	17793	26788	17518	805
Georgia	11133	16362	10528	595
Hawaii	336	438	265	91
Idaho	682	1066	737	216
Illinois	9411	17562	11489	633
Indiana	4201	7659	3966	409
Iowa	1891	2768	1722	261
Kansas	2078	3530	2554	359
Kentucky	3657	5295	4288	442
Louisiana	5912	10532	5865	403
Maine	612	924	541	216
Maryland	7914	11478	8382	618
Massachusetts	2695	3713	3141	300
Michigan	12461	21638	13122	679
Minnesota	1623	2055	1660	285

Table 5.6 (continued)

Projected Number of Inmates with Sentences Over One Year on December 31, 1982

Jurisdiction	Projection I	Projection II	Projection III	Error
Mississippi	2509	3505	2738	339
Missouri	4998	7192	5549	422
Montana	552	915	684	172
Nebraska	1421	2123	1572	259
Nevada	954	1335	1092	203
New Hampshire	255	309	210	121
New Jersey	5867	7382	5659	523
New Mexico	1221	2154	1461	245
New York	17706	26722	18856	781
North Carolina	11570	16100	11745	748
North Dakota	161	261	134	89
Ohio	12523	22141	12331	727
Oklahoma	3416	4980	3335	398
Oregon	2804	5156	2973	348
Pennsylvania	8014	10688	7931	549
Rhode Island	493	719	539	139
South Carolina	6432	10059	6716	509
South Dakota	482	971	622	167
Tennessee	4817	7049	5498	473
Texas	20717	28229	22755	859
Utah	851	1197	936	217
Vermont	307	421	394	140
Virginia	6179	7792	7454	504
Washington	3881	5790	4368	395
West Virginia	1295	1600	1140	239
Wisconsin	3298	5193	3415	364
Wyoming	339	463	350	87

The distribution of growth rates among southern States does not emerge as significantly higher than the national aggregation shown in Figure 5.1. Rather, the distinguishing feature of the South is in the clustering of most States within a comparatively narrow range, amounting to annual growth rates between 3.5 and 7.5 percent. Of the four exceptions, two States--Delaware and Louisiana--experienced much sharper recent growth trends, and two others--Alabama and Mississippi, for which no projections are shown in this figure--experienced substantial reductions in State prisoners as a result of Federal court orders.

A recurrent theme of the preceding chapters of this report is the diversity exhibited by the States. Few policies could be found on which the four case study States were similar. Facilities were constructed in South Carolina and closed by court order in Mississippi. Facilities functioned near their design capacity in Iowa, and at two to three times those levels in Illinois. Nationally, the range of facility adequacy and population levels exhibit comparable extremes. Examination of the projected levels of prison population for 1977-82 shows that here too, State situations are widely divergent in degree of change expected.

In Figure 5.2, we show the relationship between the incarceration rate of the at-risk population (here defined as all persons aged 18 to 24) and an index of time served.* Among the States, median duration of stay varied by more than a factor of three. The proportion of total at-risk population that is incarcerated shows even greater variability--by roughly a factor of five. As one might expect, the duration of stay is significantly correlated with the incarceration rate. (The simple correlation is .40, $p = .002$.)

Figure 5.3 shows a correlation between the overall imprisonment rate and the percentage of inmates convicted of violent crimes.** This correlation proves to be entirely explained by the longer sentences generally served by violent offenders; the partial correlation between imprisonment rate and percent violent vanishes ($r = .04$) when the effect of longer time served is statistically removed. While one might expect that a high proportion of violent offenders would reflect a relatively lenient policy, at least toward lesser crimes, and therefore that low imprisonment rates would follow from high percentages of violent offenders, such does not appear to be the case, at least in these cross-sectional data.

In Figures 5.4 and 5.5, we compare the growth rates, as projected by Method II (constant intake and exit) with these indices of time served and offense composition, respectively. In neither case can a correlation be discerned. (In the case of time served,

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* Time already served by inmates included in the 1973 NPS-3 survey of State correctional inmates.

** Again based on NPS-3 data.

Figure 5.2

Index of Time Served

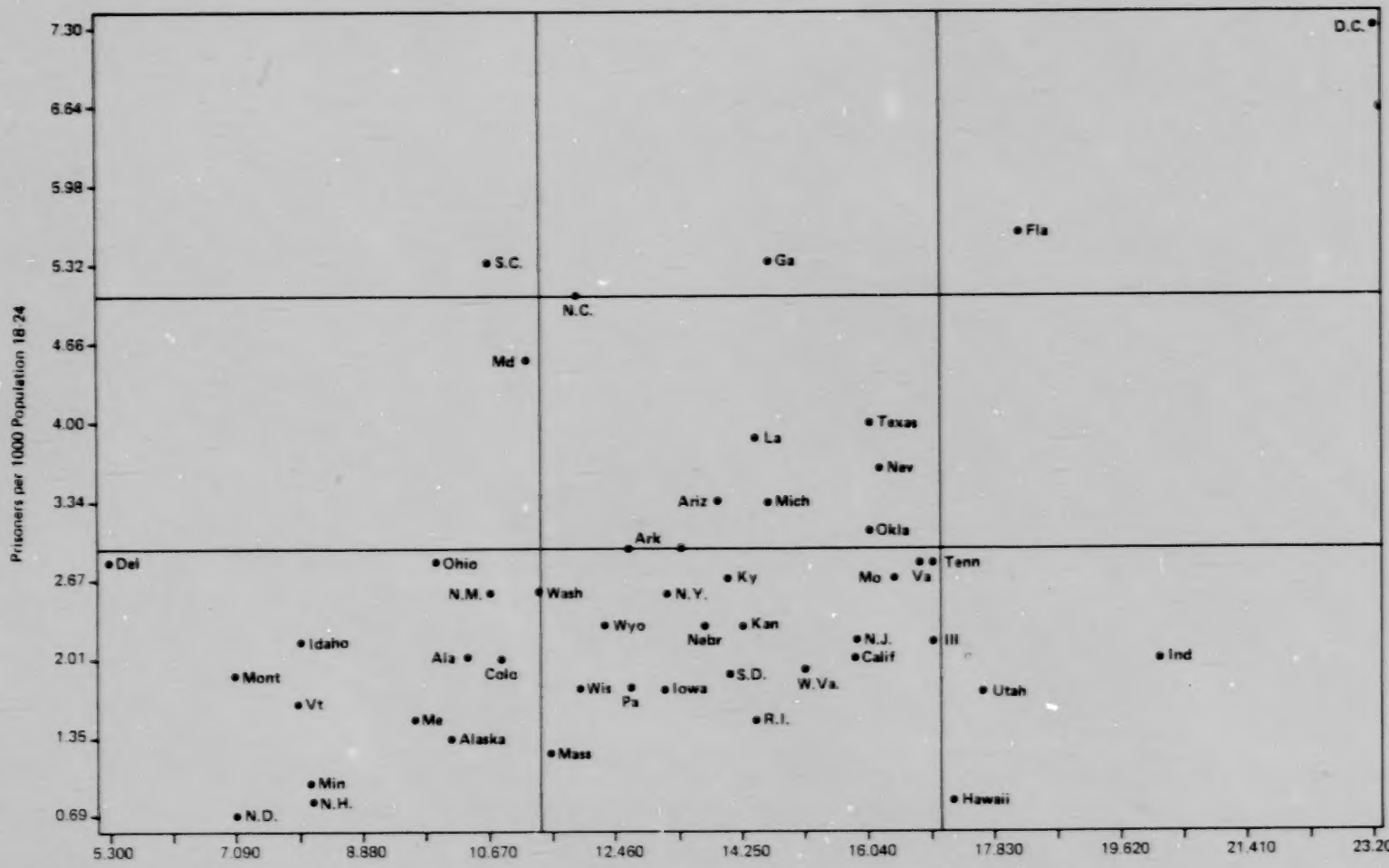


Figure 5.3

Percent of Offenders Convicted of Violent Offenses

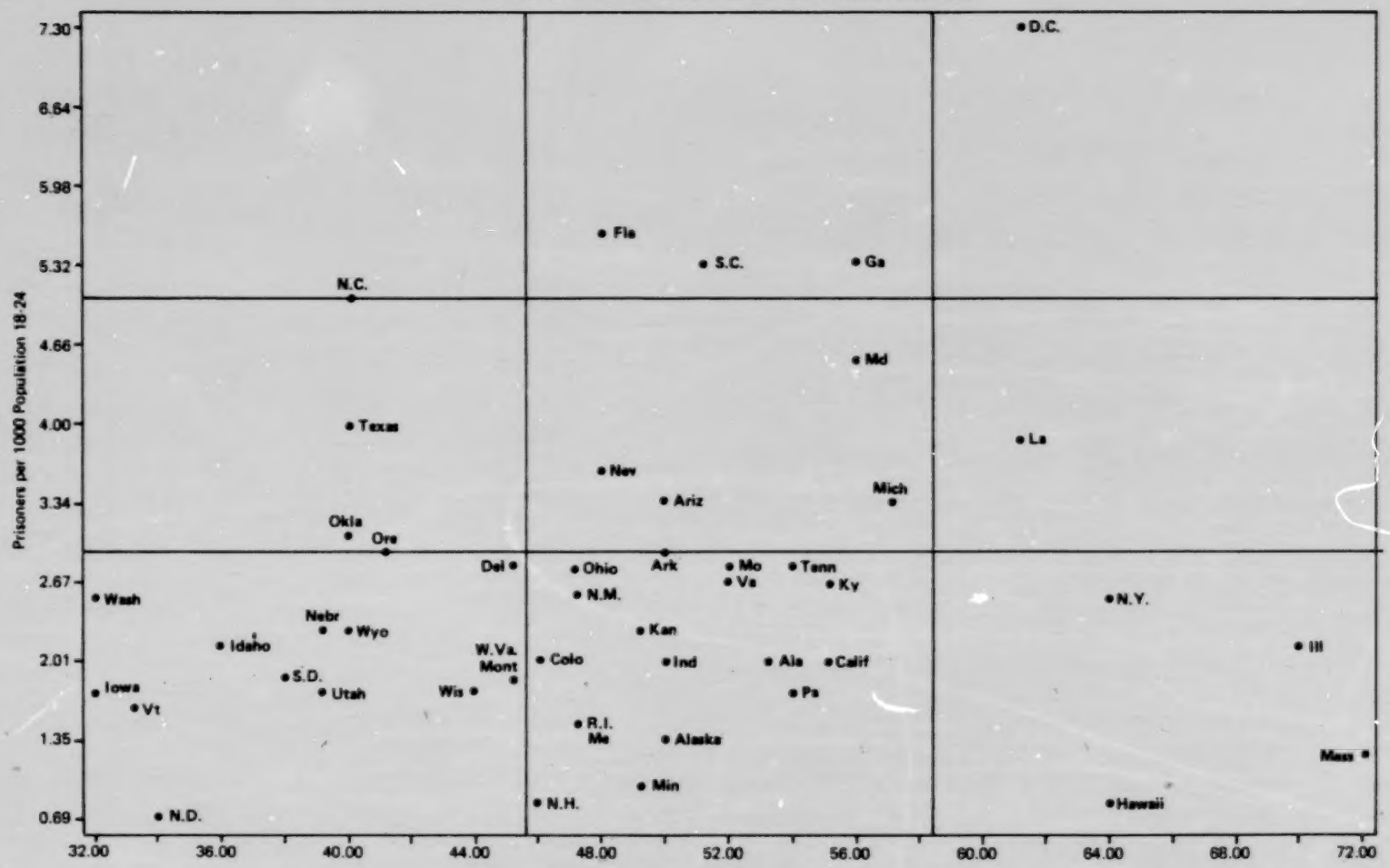


Figure 5.4

Index of Time Served

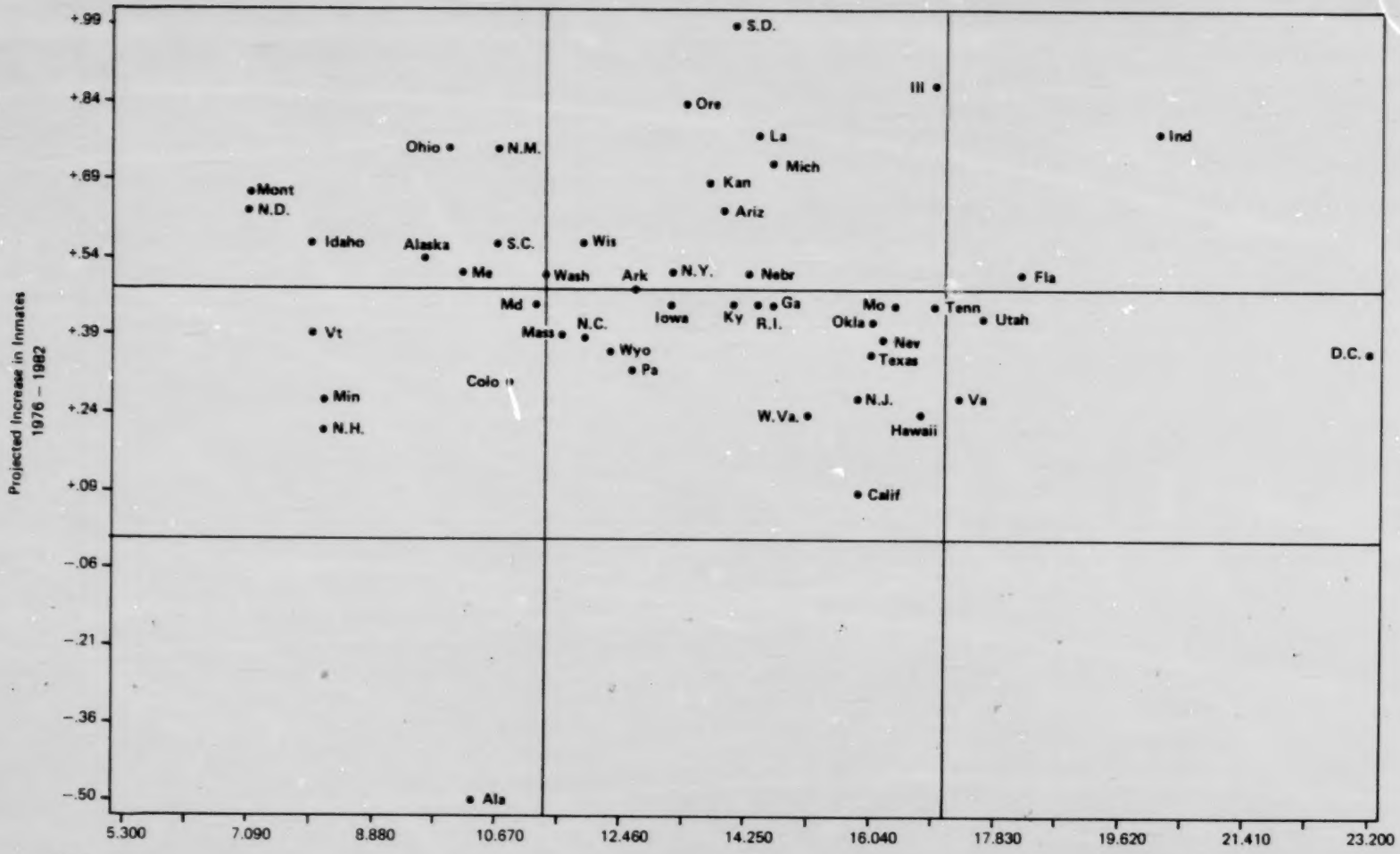
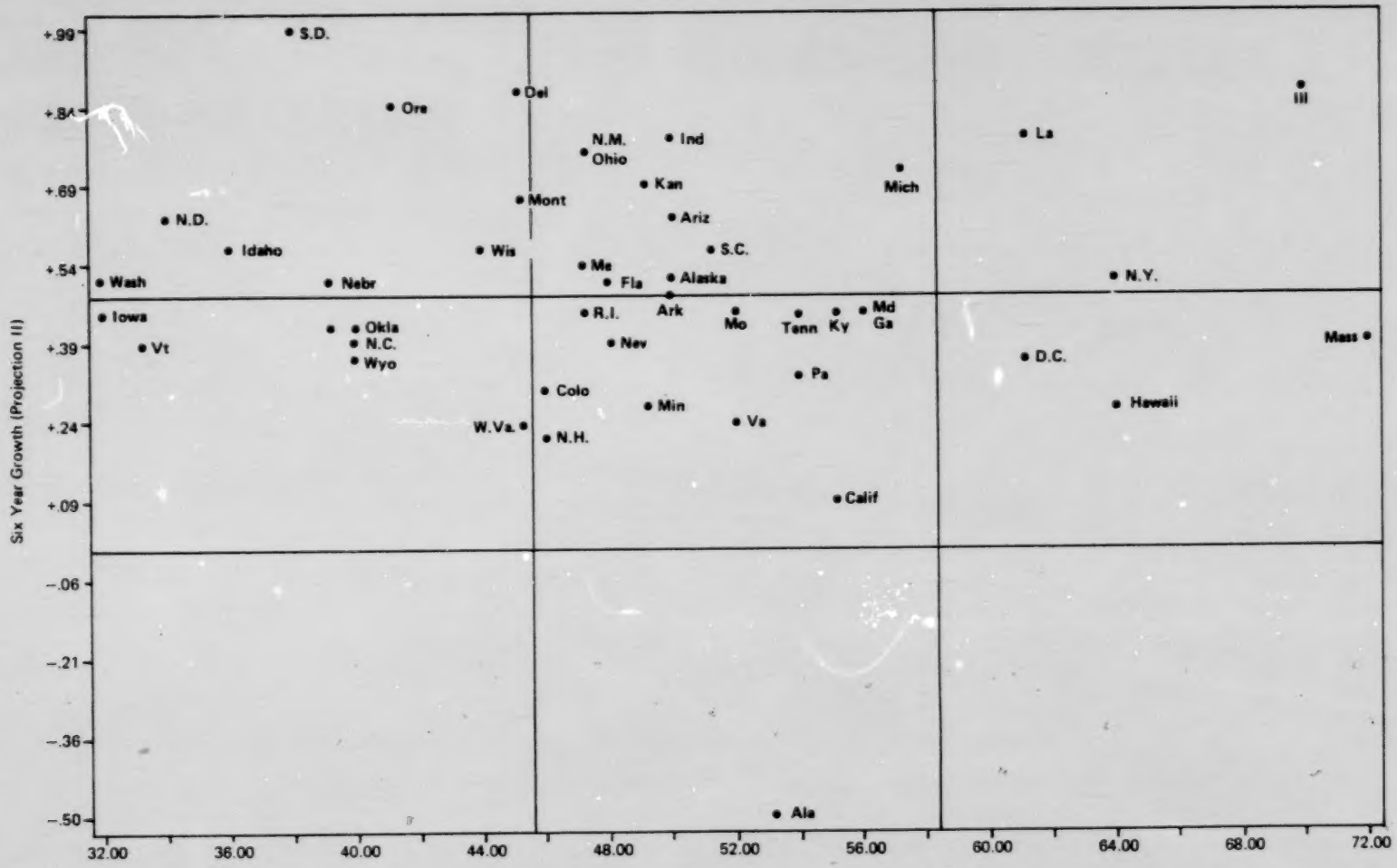


Figure 5.5

Percent of Inmates Convicted of Violent Crimes



r = -.05, p = .37. For percent violent, r = -.07, p = .31.) Nor does the imprisonment rate itself (Figure 5) correlate with the growth rates projected by Method II (r = .07, p = .31). Similar results obtain for the growth rates projected under the assumptions of Method III. (Figures are not shown; the correlations with projected growth are: time served, .12; violent offenses, -.01; and imprisonment rate, .14.)

Taken together, these results indicate considerable cross-sectional variation among States in imprisonment rates and offense distributions, which in turn may serve as indices of the severity with which offenders are treated. Over time, however, severity does not appear related to growth. The growth rates of the high-imprisonment States appear no different from those of more lenient States. It would appear that at least over the short period covered by our data, the relative positions of States are not likely to be significantly rearranged by any differential growth patterns. This analysis provides no support for the expectation that States with high imprisonment rates will respond to crowding by becoming relatively more lenient.

VI. POLICY INFORMED MODELING AND PROJECTIONS

The Overall Strategy: Scenarios and Models

The preceding chapter has dealt with projections that may be called policy blind. They attempted to project prison populations by purely statistical techniques, without considering the policy actions that determine those populations. The following sections broaden the analysis to include policy influences. As stressed throughout the report, we do not feel that a choice between these analytic methods can or should be made. Both are necessary to give the planner and the decision-maker a framework for thinking about the future of corrections.

As noted in Chapter 4, the selection of a strategy for conducting such an alaysis is more difficult than its justification. First, any forecast must examine a broad range of starting points, since future policies are unknown and will vary widely from State to State.

Second, once the range of policy options is selected, no obvious off-the-shelf method for examining their consequences exists. We chose a "mixed" strategy, combining the use of qualitative scenarios with two quantitative simulation techniques, simple flow modeling and dynamic modeling. Each of these technical terms requires an introductory, nontechnical discussion. The interested reader will find an additional discussion in the Technical Appendix.

Summary Description of Scenarios

As used in this chapter, the term scenario means a hypothetical "future history." It characterizes a plausible change in some aspect of the policies affecting correctional populations, examines the context in which such a change might occur, and con-

siders some of the possible effects on prisons and other areas of the criminal justice system. Neither individually nor collectively do the scenarios constitute a prediction in the narrow sense of the term. Individually, each may be thought of as the first part of an "If...then..." statement. For example, the first scenario assumes "If we were to adopt a more stringent policy in specified ways on the imprisonment of offenders convicted of all types of crime...", and then attempts to simulate the effects of such a policy change, using the two models described below. Each scenario is a cluster of assumptions about a type of policy change and the context in which it might occur. Thus, the scenario is neither true nor false. Although based sufficiently in real experience to be plausible, each is illustrative of a type of policy change and is not a literal prediction that such a change will occur. Any attempt to rank the scenarios in order of probability would be contrary to the spirit of the exercise.

Collectively, the scenarios summarized in Table 6.1 do represent our current best judgment on the likely range of developments, but a caveat must be mentioned. Each scenario is an abstraction from reality; its purpose is to give us a "handle" on analyzing alternative future developments. To the extent that some of the scenarios may "come true" in the real world, they will not be mutually exclusive. In any State, several may operate simultaneously. Reality will not be as neat as our four-column chart. The alternative futures are intended more to isolate the effects of classes of future policy choice than to predict; we are aware that in the real world, no scenario will occur in such a "pure" form.

The scenarios have been chosen to reflect the range of policy alternatives currently under discussion. Obviously, these judgments can be challenged. No perfect consensus exists among experts as to which scenarios were important enough to be included; nor do the experts agree as to which variables should be considered as part of each scenario. After extensive consultation with officials and scholars in the field, we feel that the analysis below is a fair representation of the spectrum of policy options and components most likely to affect the future of United States corrections over the next five years. Obviously, given more time, the list of scenarios might have been lengthened.

The first five scenarios address policy options that surround the sentencing-to-release portion of the criminal justice system, although all may depend on prosecutorial changes as well. Within this grouping, two options have been distinguished involving change in sentencing and release policy across the board, two involving legislatively mandated minimum imprisonments and one concerning the current debate on restructuring

Table 6.1

Summary Chart of Scenarios

Scenario Title	Focus of Activity	Basic Motivation	Policy Application
A. Changes across the board			
1. General law and order	Prosecutors, sentencing judges, and Parole Boards	Tougher policy on all offenses	Higher imprisonment rate (reduced probation rate); longer sentences; stricter parole policy
2. Reduced imprisonment rate	Prosecutors, sentencing judges, and Parole Boards	Relieve prison overcrowding	Increased probation for all offenses; shorter sentences; looser parole policy
B. Mandatory Minimum Policies			
3. Personal danger priority	Prosecutors, sentencing judges, and State legislature	Concentrate imprisonment on violent crime	Two-year mandatory minimum imprisonment for PD convictions; increased probation for others
4. Persistent offender priority	Prosecutors, sentencing judges, and State legislature	Incapacitate repeat felons	Mandatory imprisonment plus sentence enhancement for "two-time losers"
C. Structuring Discretion			
5. Determinate sentencing	State legislature and sentencing judges	Remove time-served disparities; put ceilings on sentences	Legislative preemption of parole system
D. Broader Policies			
6. Judicial intervention	Federal courts	Ensure constitutional prison conditions	Minimum "adequacy of space" standards
7. Federal aid to prison construction	U.S. Congress	Relieve prison overcrowding	Matching federal funds to 50 percent of state requirements
8. Federal aid to prison alternatives	U.S. Congress	Reduce fraction of general population imprisoned	Federal funds for community corrections

discretion. The second group addresses possible changes in the broader social policy context and their possible effects on prison capacities.

We are aware, of course, of other influences on correctional populations, whether external to the criminal justice system (such as demographic and economic factors) or internal to it (such as arrest practices). These influences are much less amenable to control by centralized policy choices, and holding them fairly constant is necessary to dramatize the extreme variability in correctional populations which can be introduced by alternative choices late in the policy process. Moveover, the sentencing-to-release and capacities areas are the issues in which the Congressional mandate expressed particular interest.

Summary Description of Models

In Chapter 4,* we presented a brief defintion of the term "model" and a general description of dynamic modeling, one of two principal techniques used in this chapter. Before providing a more detailed justification of the use of dynamic modeling in policy-informed analysis, we contrast it here with the simple flow model through which some of the scenarios were also processed.

The flow model concentrates exclusively on the path and volume of offenders into and out of prison. Each jurisdiction under study takes, as a starting point, the 1976 levels of court commitments and parole revocations as the basic inflows to the correctional system. Since no final data for 1977 exist, these flows are held constant for this year, and the policy change under study is assumed to be introduced on January 1, 1978. Then, this new policy prevails throughout the forecast period, and its cumulative effects are measured by a computer simulation. The exercise is repeated for all five of the sentencing and release policy options.** The outflow variable is completely determined by the current population and the average time served in prison; the latter (except where explicity modified in a scenario) is assumed to be unchanged in each jurisdiction throughout the forecast period from its 1976 value.

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*pp. 97-98 ff.

**The flow model seemed inappropriate for the contextual scenarios, which were processed only through the dynamic model, described below.

The utility of a simple flow model is to help illustrate the effects of making a policy change in 1978 and not changing it again for at least five years. In terms of the discussion in Chapter 4, the simple flow model begins with a series of alternative policy changes and then treats each one as a business as usual projection.

The Dynamic Model is intended to investigate the implications of policies that modify the flows. In technical terms, the transition probabilities are assumed to change. The model is initialized in a past year, e.g., 1955. Driven by an exogenously specified crime rate, it is run forward to produce values of variable through 1982. Table 6.1 shows the levels of prison population in the model at the end of 1982.

Thus it has two goals: to represent quantitatively and to simulate in a computer the initial relationships among components of the system, and to expalin how these relationships may change over time under the impact of different policy choices by different actors. The equations are not a perfect reflection of reality, but the authors contend that enough is known about these relationships to make the exercise useful for the planner and decision-maker.

Both of these models can be misused. This is especially true of the quantitative expression of their results. These are intended to give a sense of scale. If the numbers are taken too literally, the exercise will give only a spurious sense of precision. Given the state of the discipline, more cannot responsibly be claimed or sensibly attempted.

Elaboration of Dynamic Modeling

Due to the unfamiliarity of most readers with dynamic modeling, this section presents an overview of its utility as a tool for analyzing policies affecting corrections populations.

Factors Affecting Prison Population

The size of prison populations is the result of numerous decisions within both the criminal justice system and the wider political sphere. These decisions can be grouped at four levels.

1. Correctional policy
2. Criminal justice policy
3. Interactions between crime and the criminal justice system

4. Interactions among crime, the criminal justice system, and the political sphere

The Dynamic Model deals with factors at the first two levels, and to some extent, at the fourth; but factors at the third level are omitted, because crime in these models is exogenously treated.

At the innermost level is correctional policy. For this discussion, correctional policy includes decisions about parole, operation of correctional institutions, and construction of correctional facilities.

At the next level are the policies governing the other components of the criminal justice system, primarily the police and courts. From this viewpoint, the criminal justice system can be considered a three-tiered processor of criminal cases. Crimes are reported to or detected by the police. A fraction of these crimes produce court cases. After a delay, cases are adjudicated; a fraction of the defendants are sentenced to prison. By regulating prison inflow and the sentences imposed on offenders, the police and courts can influence correctional populations.

Interactions between the criminal justice system and the volume of crime are at the next level. These interactions might possibly include the deterrent effects of legal sanctions, incapacitation of offenders, or adverse impacts of labeling persons as ex-offenders. Although such interactions might be included in a more thorough Dynamic Model, they have been omitted from the current model because of the uncertainty about their impact. Thus, the study is confined to examining how correctional populations and other factors in the criminal justice system are affected by changes in the volume of crime; and not how crime rates in turn respond to criminal justice policy.

At the fourth level are the interactions among the volume of crime, political decisions, and criminal justice policy. This level includes the impact of public concern over rising crime on both laws and criminal justice policy. The effects of changes in political philosophy on the criminal justice system are also included. For example, the Reagan administration's efforts to reduce expenses by reducing the volume of prisoners is related to the decrease in California's prison population during the early 1970's. This shift in policy produced changes in the correctional population which cannot be attributed to the normal operation of the correctional agencies.

Modeling the impact of political decisions on correctional populations can be handled in two ways. First, the interactions between public opinion, political decisions, and criminal justice

can be explicitly modeled. Necessarily, there is considerable uncertainty about the direction and magnitude of the effects. Alternatively, changes in policies can be imposed at particular times on the model in the simulation testing the effects of policy changes. This second approach is followed by generating the eight scenarios described above.

Consequently, the results of the dynamic modeling are projections in a restricted sense. These projections assume that current policies will either remain in effect or change in a particular way at a particular time. Projections may be rendered inaccurate in three ways: unexpected changes in policy, factors that are excluded from the model, or mistaken assumptions present in the model.

Corrections Sector of the Dynamic Model

The Corrections Sector of the dynamic model is important enough to discuss in the body of this report; other sectors, including the Police and Court Sectors, are detailed in the Technical Appendix. The Corrections Sector discusses the potential influence of prison population and other factors on the flows of persons into and out of prison. It also does the basic bookkeeping which translates flows into changes in the prison population.

Levels and Rates

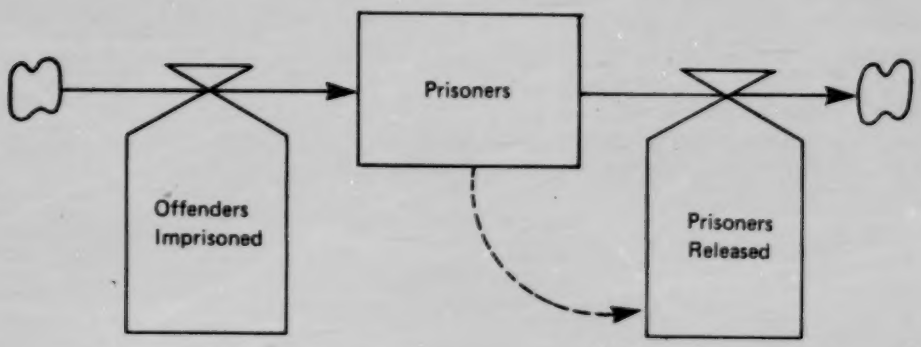
Using a diagramming convention, Figure 6.1 depicts the prison population with the flows of persons both into and out of prison. Since rectangles represent levels (i.e., stocks or accumulations of quantities) in this convention, the rectangle specifically represents the population of prisoners. The valve symbols represent offenders imprisoned (admissions) and prisoners released. As an accounting identity, the change in the number of prisoners within one year is its inflow minus the outflow. Therefore, to realize how the prison population changes, we must understand how the flows change through time.

What factors might influence the flow? One obvious factor is the prison population itself. This is certainly true at the extreme; if there were no prisoners, there would be no prisoners to release. It is also true for other levels of population. Prisoners leave primarily through parole, pardon, or expiration of sentence. Following an increase in prison population, the flow of prisoners released will consequently increase as these new prisoners complete their terms.

The dashed line in Figure 6.1 represents the relationship between the number of inmates and the release rate. Figure 6.1 also depicts a feedback loop. Feedback occurs when information about a level (e.g., a prison population) influences a rate of flow (e.g., prisoners released) which, in turn, affects the level. Although Figure 6.1 represents prisoners and prisoners released, the structure represented in Figure 6.1 is typical of numerous feedback loops in various situations.

Figure 6.1

Diagram of Prisoners, Offenders Imprisoned, and Prisoners Released Showing Feedback Between Prisoners Released and Prisoners



The number of prisoners as an independent factor is insufficient in determining the flow of prisoners released. The complementary factor determining the rate of flow is the "average effective sentence" (the period of time that offenders spend in prison). While "average" is employed to clarify that offenders spend varying times, "effective" differentiates this use of sentence from the court-imposed sentence. By definition, for the aggregate flow,

$$\text{prisoners released} = \frac{\text{prisoners}}{\text{(average effective sentence)}}$$

Average Effective Sentence and Prison Capacity

As shown in Figure 6.2, the average effective sentence lies within another feedback loop. Prisons have limited holding capacities. If the inflow of prisoners starts to increase, correctional officials have four options:

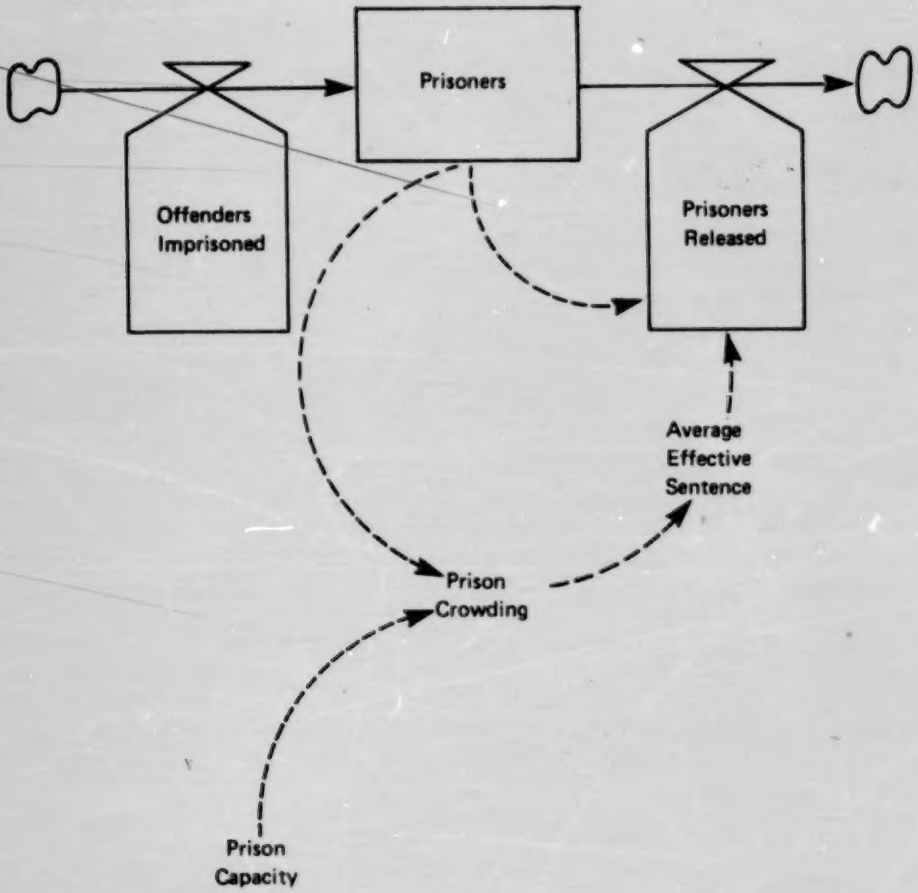
- Tolerate increased crowding in the prison
- Shorten the average effective sentence
- Seek to reduce the inflow
- Build new facilities

Although prisons have some flexibility, there are obvious limits to how many people can be accommodated. Before these sheer physical limits are reached, other pressures build to reduce overcrowding. Correctional officials have strong incentives for maintaining correctional populations within capacity; overcrowding increases tensions and jeopardizes security. A second feedback loop (shown in Figure 6.2) is established. Prison crowding increases with the expansion of the prison population, tending to cause a reduction in the average effective sentence and thereby increasing the flow of prisoners released.

The extent to which correctional officials are able to use this adjustment depends on their ability to influence other agencies. Since parole is the primary means for releasing prisoners early, overcrowding depends on responsiveness of the parole boards to the correctional officials' desires to avoid overcrowding. States vary considerably in this responsiveness. Population data in Massachusetts suggest a responsive Parole Board, as prison population has remained relatively constant since after World War II, despite increases in crime and prison admissions. As the inflow has increased, sentences were reduced accordingly to avoid overcrowding. In Iowa, Parole Boards have been receptive to the needs of the Department of Corrections. Local observers in 1977 attributed population decline between 1970 and 1972 to a number of factors including the desire of the director of the Department of Corrections to lower the population, and the willing response of the Parole Board to this pressure. In Illinois, much more overcrowding has been tolerated. Yet, outflow from the prisons has tended to follow the inflow, indicating some adjustment of outflow to partially controlled prison population.

Figure 6.2

Feedback Connecting Number of Prisoners, Prison Crowding, Average Effective Sentence, and Prisoners Released



Limitations on Sentence Adjustments

The existence of a feedback-adjustment mechanism cannot insure its continuation in future operations. When sentences are relatively long, Parole Boards may have more flexibility than when sentences are shorter. However, this impact is not well documented. What is documented is that Parole Boards are sensitive to public pressure and perceptions about letting offenders out of prison.

> Another influence on parole decision making is what can be called the political factor--the pressure on any government agency working in a democracy. Parole Boards need to survive and function in a public, and hence, political environment of fear of crime and punitiveness toward criminals, and in a criminal justice system that is sensitive to that environment. This fact pressures boards to be conservative--to take a "when in doubt keep him in" stance--in the face of human and professional inclinations to be more lenient.

In some of the case study States, Parole Baords have reacted to criticism. Researchers for the Iowa case study (see Chapter 3 of this report) found

> The rise in prison population in the eighteen months after October 1974 coincided with a disturbance in the prison in Anamosa and a highly publicized crime in which a few prisoners on furlough from the Riverview Release Center were accused of breaking into a nearby Holiday Inn, robbing several guests and killing three people...A Parole Board member suggested that, having experienced the backlash to earlier high rates of release, the Board was unlikely "to go that route again."

In California high release rates to reduce prison populations were followed by political criticism and a reduction in parole.

In the last few years, South Carolina has also endeavored to confront rising population with acquisition of additional bedspace. Throughout its existence, the Department has had to be resourceful in obtaining physical space for its expanding population, coping with perpetual overcrowding due to the shortage of adequate space. The Department took over many of the county prison camps as a solution to their pressing spatial needs, although the operation of those small facilities has since been demonstrated uneconomical. South Carolina has declined to adjust sentences in response to overcrowding. The result is a rising prison population driving the acquisition of capacity.

As shown in Figure 6.3 prison crowding occupies a place in two different feedback loops. In a particular State, one loop may operate more strongly than another. The relative strength of the adjustment mechanisms is called loop dominance. A feedback loop dominates another loop when it operates more effectively; the behavior of the system reflects the operation of the dominant loop. For example, in Massachusetts, sentence adjustemtns through parole dominate adjustments through capacity acquisition. In South Carolina the reverse currently is true.

Loop dominance presents policy and research problems. The dominated loop tends to be inactive; thus, it is easy to overlook its existence. The loop dominance can shift, however, producing unexpected results. These shifts arise from two reasons; the operation of the system itself and an externally imposed change in policy. As an example of the first reason, the dominance of sentence adjustments can be eliminated if sentences become short enough that Parole Boards are unwilling to parole people after increasingly shorter sentences. As the limit is reached, crowding begins to mount, forcing acquisition of space.

As an example of the second reason, certain changes in sentencing laws could cause a shift in dominance. Fixed sentences and mandatory minimum sentences, to the extent that they limit the Parole Board's ability to adjust sentences, can shift the burden of crowding regulation from the Parole Board to some other mechansim.

One purpose of the dynamic modeling approach is to evalute the impact of hidden, but potentially active, control mechanisms.

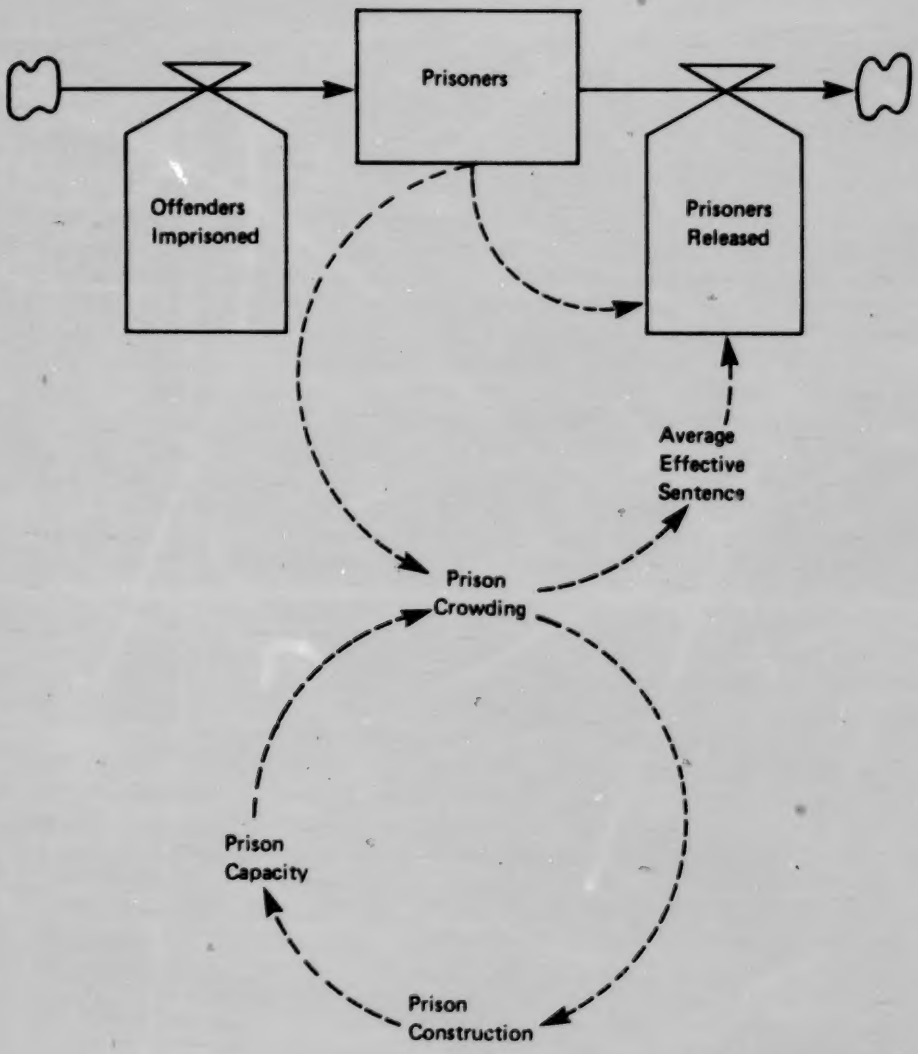
Regulation of Admissions

A third way of controlling crowding is to limit the inflow of admisssions. Whether this mechanism does operate or might operate in the future is open to some speculation. Anecdotal evidence suggests that judges in Massachusetts do consider overcrowding in sentencing. For example, a District Court judge has refused to sentence offenders to Massachusetts Correctional Institute at Concord until the overcrowding is alleviated there. In 1975, the Chief Justice of the Superior Court declared a moratorium on sentencing to the same facility due to overcrowding (WCVB-TV Editorial, March 14, 1975). However, our interviews in South Carolina indicated a general judicial belief that judges should not take overcrowding into account in passing sentences.

Future events may make control of admissions more important than at present. In those States where prison population is closely controlled, intervention by the judiciary has not been necessary; thus the possible effects have been masked (another instance of

Figure 6.3

Two Feedback Loops Involving Prison Crowding



loop dominance). As limitations are placed on other feedback, this mechanism may come into effect. For example, limiting the discretion of Parole Boards may place a greater burden on the judiciary to control prison overcrowding. As a second factor possibly increasing the role of trial judges in controlling prison admissions, the number of prisoners' suits in Federal courts concerning conditions in prison may raise the sensitivity of trial judges to federally mandated guidelines on prison crowding and other conditions.

Outside Factors

The mechanisms described above are not absolute laws of nature. Their impact has been and possibly will be overridden by externally imposed policy decisions. For example, in California, as a result of explicit directions to parole Boards, prison population was lowered in 1972 and 1973 to reduce correctional expenditures. Such surprise external changes cannot easily be simulated in the model, or in any analysis for that matter. To the extent that they occur in the future, projections using the model will be inaccurate. It is for this reason that we stress the conditional nature of any of the present results.

Scenarios

The following sections show how the scenarios and the models are integrated to produce conditional projections. The first section simply describes the basic policy choice being considered and presents a formula for translating it into quantitative terms that have been used by the models. The second presents the assumptions about the political context and motivation which underlie the scenario, along with some responses of the criminal justice system which might accompany the policy change. Third, we discuss the simulations for each scenario and note the factors that explain the findings. (The simulations were performed for five jurisdictions selected to represent a variety of geographical and urban-rural mixes.) Finally, we examine branch points or alternative developments that are not included in the modeling effort, but could be especially important in any real application of the scenario's policy choice.

Changes Across the Board

General Law and Order

Basic Description

The starting point of this scenario is a hypothetical application of tougher policies across the full range of offenses. Crimes against the person, against property, and so-called victimless crimes are all assumed to be dealt with more strictly. Expressed in the illustrative quantitative terms necessary for use in the models, this is assumed to translate into a 15-percent increase in the probability of imprisonment given a conviction for any crime. (The distribution of convictions among offense types is assumed unchanged from current practice.) Furthermore, the policy change is assumed to result in a 20-percent increase in both sentence length and median time served in prison for each crime. Thus, there is an implicit assumption that the overall toughening spirit of the scenario is reflected in parole policy as well.

The difference between the 15-percent and 20-percent levels is explained by our belief that of these two alternative (but not mutually exclusive) ways of getting tougher, the second-sentence length--is easier to deliver. That is, it reflects our judgment that for a sentencing judge, it is easier to add a year to the sentence of someone who was already slated for prison than it is to impose a sentence of a year on someone who is a marginal candidate for imprisonment.

It should be noted that variations of this magnitude are quite plausible. For example, for the past quater centruy, the percentage of convictions resulting in imprisonment (nationwide) has been remarkably stable at about 20-25.* Thus, the assumed policy change would simply have the effect of moving the rate from the lower bound of this narrow historical range to the upper bound.

Motivation and Political Context

Proponents of the general law and order policy are motivated by a reaction against at least three recent trends: the de jure or de facto decriminalization of certain lesser offenses in the criminal code, the decline in the effectiveness of the criminal justice system, and the emphasis on the rights and needs of arrestees and prisoners.

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* However, this does not mean that the ratio of imprisonments to defendants, or to total offenses, remained constant. Both of these have dropped, dramatically in some jurisdictions.

In general law and order, there exists a broader conception than in current practice of the type of behavior warranting serious intervention by the criminal justice system. In particular, there is hostility to the popular notion of victimless crime; general law and order proponents believe that such activities as prostitution, gambling, selling and consuming pornography, and drug use victimize all citizens by eroding vital social bound aries and weakening the mechanisms of social control. The proponents are willing to use the criminal justice system to try to halt this deterioration. Loosely related to this is the general law and order notion that the institutions of the criminal justice system are demeaned, if not corrupted, by the pervasive practice of plea bargaining. The attendant effort to "play by the book," to "make the system more a dispenser of justice and less a marketplace," would be felt especially strongly in the courts. Finally, over against the prisoners' rights notion, the general law and order scenario sets a view of imprisonment as motivated in good part by punishment, whatever its deterrent, incapacitative, or rehabilitative potential. This is reflected in its relative insensitivity to demands for standards of facility adequacy, and in the general inclination to lengthen rather than shorten sentences.

A final point on the political context of the scenario concerns budgetary requirements. Almost all features of its policy package exert upward pressure on criminal justice budgets. The only obvious exception is its skepticism about rehabilitation, but since only a small fraction of correctional expenditures is directed towards rehabilitation under current practice,[3] there are no great economies to be reaped. Nonetheless, proponents of the general law and order policy are typically confident that funds for its implementation can be found. Until recent years, they have been able to argue that such a policy could use existing facilities. This arguement is no longer plausible. By running the scenario's assumptions through the model simulations, we get a better sense of the populations and budgetary requirements of the assumed toughening in criminal justice.

Model Simulations

Although the validation runs of the dynamic model are presented in the Technical Appendix, these should be summarized here before presenting any results.

- In California, Iowa, Massachusetts, and the Federal System, the model corresponded sufficiently well to justify its use for the scenarios. In particular, the model showed some of the major behavior modes seen in the system. In response to the large increase

Table 6.2

Modeling Results

Scenario Title		CALIFORNIA	IOWA	MASSACHUSETTS	SOUTH CAROLINA	FEDERAL SYSTEM
Changes across the board						
1. General law and order	Simple Flow	26,925	2,921	4,631	9,589	39,452
	Dynamic Modeling	25,833	2,303	2,033	9,950	27,773
2. Reduced imprisonment rate	Simple Flow	14,669	1,561	2,449	4,890	20,423
	Dynamic Modeling	17,248	1,562	2,067	6,216	20,804
Mandatory Minimum Policies						
3. Personal danger priority	Simple Flow	20,758	2,054	3,798	7,563	N/A
	Dynamic Modeling	21,245	1,959	2,127	8,710	N/A
4. Persistent offender priority	Simple Flow	22,772	2,445	3,924	8,198	33,645
	Dynamic Modeling	23,077	2,341	2,036	9,357	28,312
Structuring Discretion						
5. Determinate sentencing	Simple Flow	19,321	2,135	3,342	6,934	28,468
	Dynamic Modeling	17,592	1,906	2,098	8,370	24,099
Broader Policies and Prison Capacities						
6. Judicial intervention	Dynamic Modeling	17,769	1,926	1,493	6,771	19,754
7. Federal aid to prison construction	Dynamic Modeling	21,142	2,112	2,418	8,383	25,527
8. Federal aid to prison alternatives	Dynamic Modeling	18,373	1,846	2,249	7,733	23,839

Special Note. These figures reflect indices of the direction of effects of alternate policies on prison populations. They should not be interpreted as point estimates of actual population.

in crime, the increase in court commitments to prison rose much less. The role of the courts as a buffer between the increases in crime and prison inflows seemed to match actual data. In some cases, the model exhibited fluctuations of several years in prison population with the same general period and amplitude as in the actual data, Iowas being one such case. On the other hand, short term fluctuations often did not appear in the model and, in some cases, the longer term flucturations were out of phase with the actual data.

- The model did not exhibit behavior characteristic of Illinois. Relying on crime to increase the flow of cases into court, the model did not generate the volume of prosecutions seen in Illinois. Throughout, the model fails to produce the actual marked increase in prison population. Due to this variation, the Illinois figures for the scenarios are unreliable, and Illinois is included only in the base run displays.

- The lack of data for South Carolina does not permit a judgment on the ability of the model to match the situation in South Carolina.

- Although revisions in model structure, model assumptions and parameter estimations would increase the reliability of the model, the model does provide a useful counterpart to projections based on extrapolations illustrating possible effects of policy changes on prison population.

Figures 6.4 and 6.5 are graphic representations of the base run* of each model, and Figures 6.6 and 6.7 display the results of the two simulations of the general law and order scenario.

In both the simple flow model and the Dynamic Model, the scenario's overall result is to raise prison populations substantially in all five jurisdictions. The immediate cause, in both cases, is the increased level of new court commitments. However, the Dynamic Model's net population increases are smaller in percentage terms than those of the simple flow model. The explanation for this disparity lies in the dynamic model's assumptions about the courts: It

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* The base runs represent each model's view of what the future would look like in the absence of any of the scenario policy changes. Each base run may be thought of as the respective modeler's "business as usual" projection.

Figure 6.4

Prison Population for Base Run Simple Flow Model

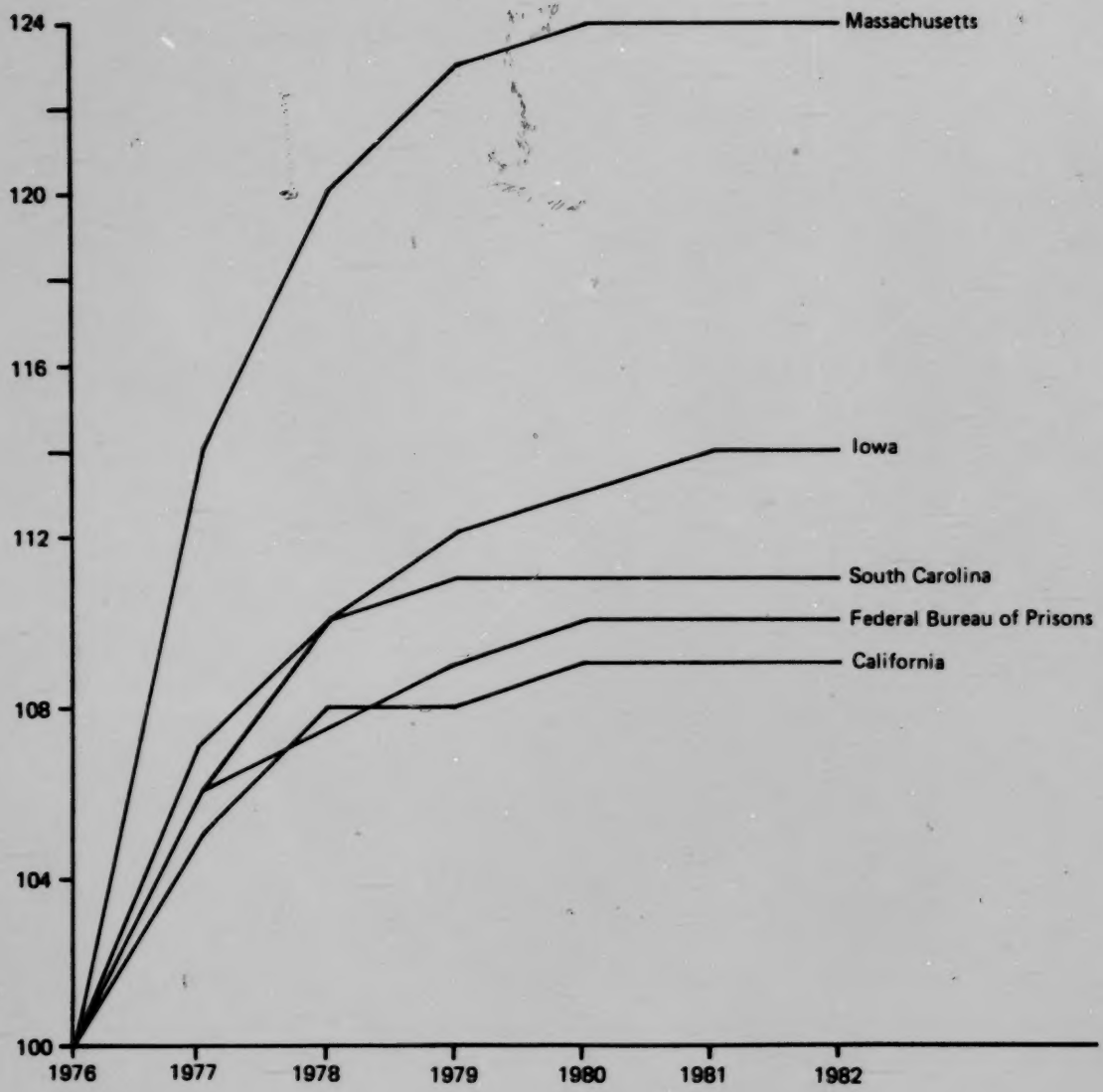


Figure 6.5

Prison Population for Base Run -- Dynamic Modeling Approach

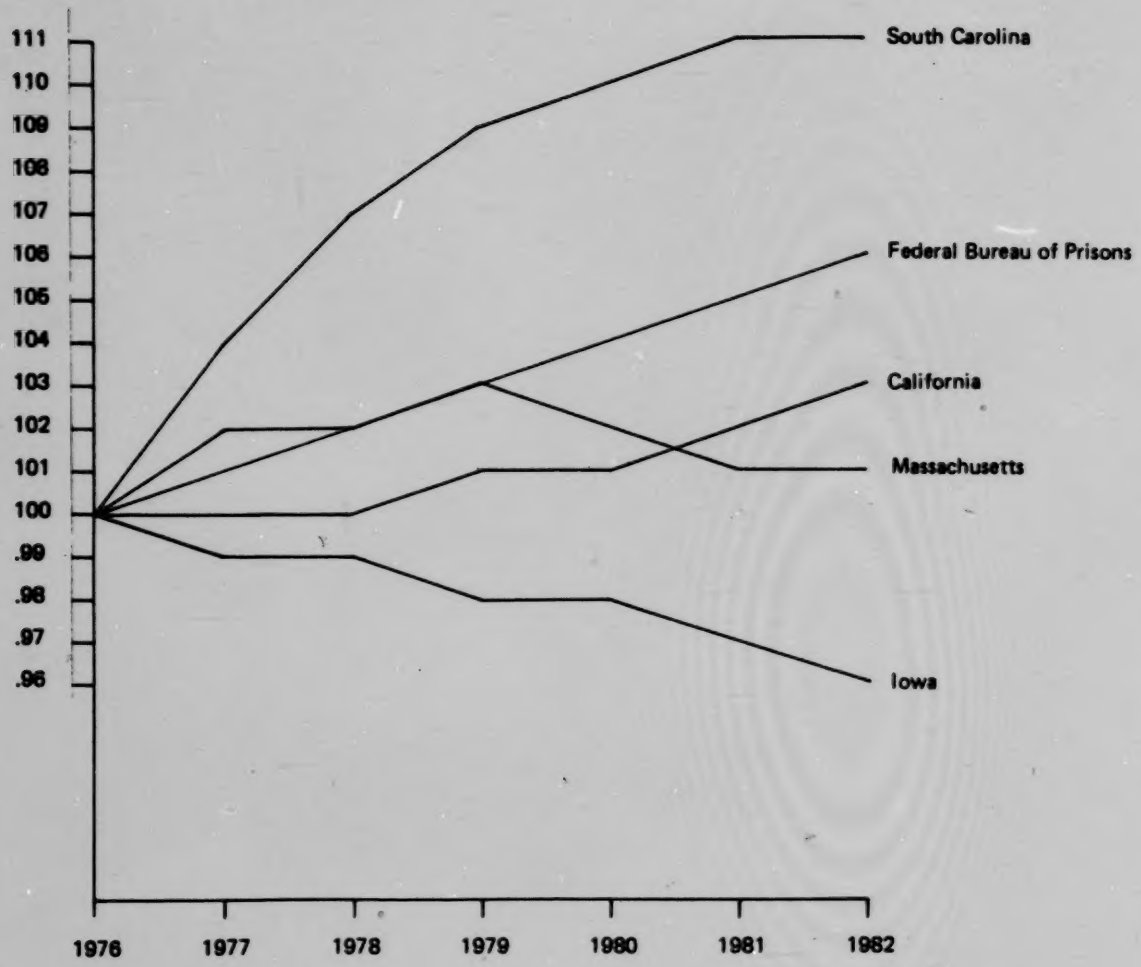


Figure 6.6

Prison Population Under General Law & Order Scenario – Simple Flow Model

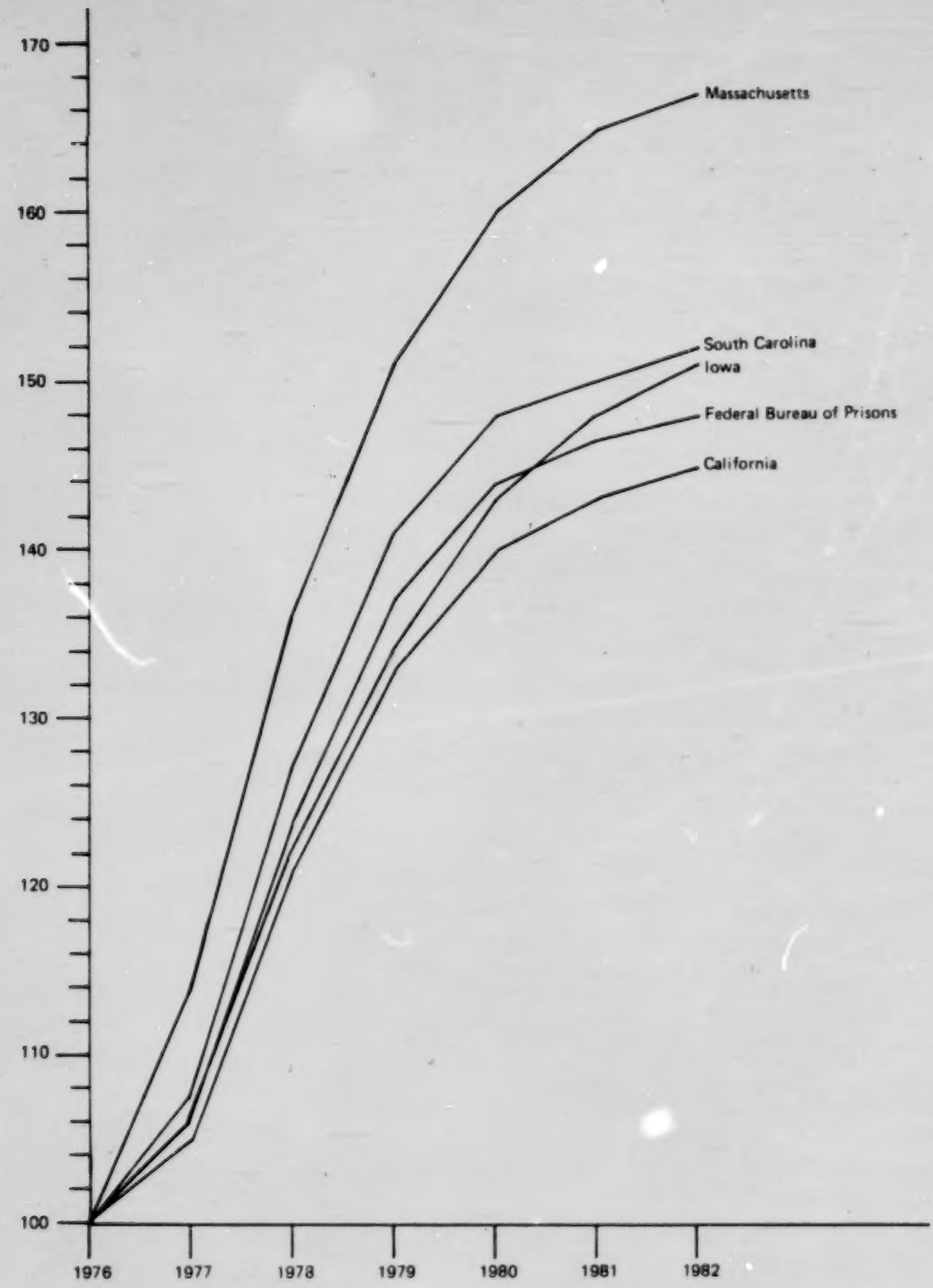
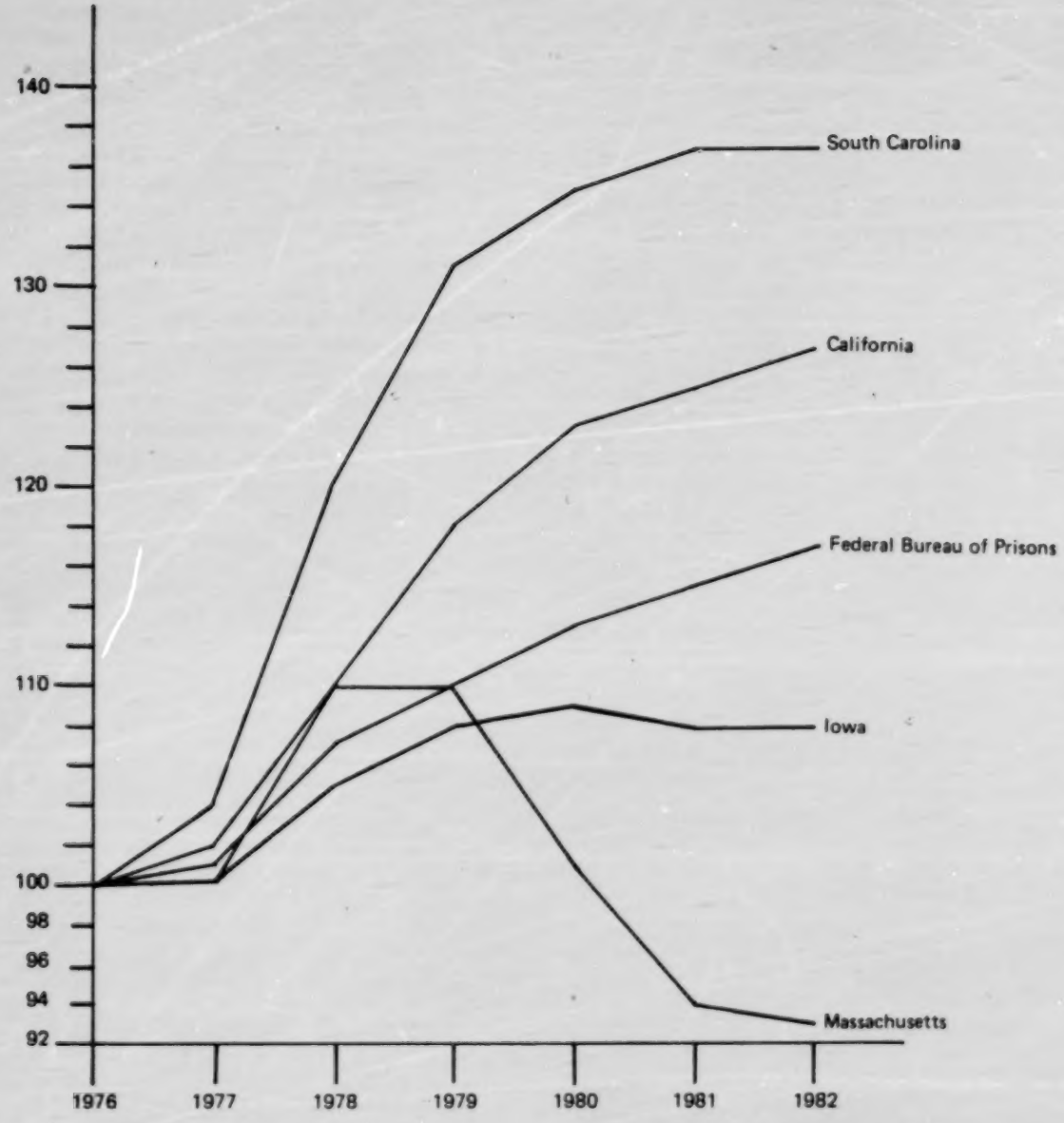


Figure 6.7

Prison Population Under General Law and Order Scenario – Dynamic Modeling Approach



assumes that because of the new policy's reduction in the system's willingness to plea bargain, there are more trials and longer trials, and the court's ability to process the flow of cases is reduced. In the simple flow model, no such assumption is made, and the rate of case flow through the courts is assumed to be as high as it was under previous policy. This maintains the upward pressure on prison populations.

A second feature of the Dynamic Model kept its general law and order results proportionately lower than those of the simple flow model. In the dynamic simulation, the system was assumed to respond to the threat of prison overcrowding. Specifically, Parole Boards were assumed to relax release policy somewhat in the face of this threat, resulting in a reduction in average time served for all offenses and a relief in the crowding pressures. No such mechanism was assumed to be operating in the simple flow model, allowing its population levels to remain higher than those in the Dynamic Model.

The graphs show that the Dynamic Model's adjustment of average time served interacts differentially across States with different inclinations to expand prison capacity. In a State such as Massachusetts, which seems to be reluctant to undertake the construction of new capacity, there is a tendency as the forecast period progresses for the parole-adjustment mechanism to drive populations down to earlier levels. In a State such as South Carolina, characterized by a relative willingness to build new facilities, capacity tends to expand to accommodate increasing levels of crowding. In these States, population levels show a tendency even in the Dynamic Model to approach those in the nonadjusting simple flow model.

Branch Points

This section notes ways in which the scenario's hypothetical policy change might be deflected in any real application. These were not processed in a simulation, but require mention in any study of this kind.

In the model simulations, we assumed that the general law and order policy is pursued for the entire five-year period under study. However, many analysts feel that the system effects of the shift would erode its application dramatically with each year. They doubt that the general law and order proponents realize that a relatively slight increase in admissions levels not compensated by an increase in release rates would cause very large growth in the remaining population. An example of the sensitivity of prison pouplations to small changes may serve to illustrate this point. With

present sentencing and release policies, each prison admission implies roughly two prison-years of incarceration. This means that increasing prison time by one week for each inmate would increase the total number of inmate-weeks from roughly 104 per inmate to 105. Hence, each week added to time served may be equated to an additional one-percent increase in the incarcerated population.

Thus, it is not surprising that in the simulation for some jurisdictions, 15-20% changes in both commitment and release policy produced even larger population increases. To some observers, these will seem implausible; they will feel that an alternative and plausible version of a general law and order scenario is one in which the basic policy change is applied on a sliding scale such as 20-percent increases in the first year, 15 percent in the second, etc.

A related branch point concerns the general law and order effort to extend the degree of serious criminal justice intervention into the area of victimless crime. Though even in this tougher policy it seems implausible that large numbers of these offenders would be sentenced to prison terms, it is more plausible that they might be sentenced to jail. An important effect of a sharp increase in the rate of misdemeanor imprisonments would be to block the safety valve that the jails now constitute in cases of prison overcrowding. Although the simulations do not address this branch point; it should be mentioned as a potentially significant feature of any effort to apply a general law and order policy in the future.

Reduced Imprisonment Rate

Basic Description

In a limited way, this is a counterpart to the general law and order scenario; the same basic indicators are used, but pointed in the opposite direction. The probability of imprisonment given a conviction for any crime is assumed to drop by 20 percent in this hypothetical policy change, and the distribution of these convictions among offense types is held constant as under current policy. Also, the average length of court-imposed sentences and of time served is assumed to drop by 15 percent. There is historical precedent for comparable drops in short periods. In New York, for example, the median time served to first release for all felony imprisonments dropped from 32 months to 26 between 1960 and 1964. However, as the following section shows, the motivation and rationale of the scenario are not counterparts to those in the general law and order policy just described.

Motivation and Political Context

Although the basic indicators used in these first two scenarios are similar, their respective underlying rationales are not comparable. In this hypothetical policy change, imprisonment rates and average time served are assumed to drop not in response to a "general softening" philosophy that opposes general law and order, but simply in response to prison overcrowding. In the reduced imprisonment scenario, there is no abstract notion that the net of social control is too wide, or that incarceration is being overused. The basic motivation is assumed to be that of a system trying to adjust its workload to its capacities. Thus, for example, prosecutors are assumed highly motivated to accept "cheap pleas" wherever possible; and even at these "bargained down" levels, the ratio of indictments to arrests is assumed to drop substantially. At the sentencing juncture, the scenario assumes an increased ratio of probations to convictions, with a commensurate decline in the imprisonment/conviction ratio. Given the dominant motiviation to alter imprisonment policy only insofar as this is made necessary by limits on available correctional space, an increased usage of community corrections does not seem very plausible. The final scenario* examines a situation in which a reduced imprisonment rate stems from a motivation much closer to "general softening" and much more receptive to community corrections.

Model Simulations

Figures 6.8 and 6.9 depict the results of the simulations for this scenario. In both models, all five jurisdictions show a decline in prison population. This is explained, in part, by the decline in inflow produced by the change in policy. To the extent that the two models show difference in the size or duration of these reductions; an important influence is the assumed response of Parole Boards. In the simple flow model, effective sentences are taken as fixed at 1976-77 levels; they are assumed to remain there in the presence of excess capacity. However, in the Dynamic Model, it is assumed that Parole Boards are inclined to increase time served as crowding is relieved. The strength of this effect varies among jurisdictions. The available data suggest Massachusetts and California are likely to show this effect most strongly.

As indicated in the previous scenario, another factor may come into play. In addition to the Parole Board's upward adjustment

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* Federal Aid to Prison Alternative, p. 199ff.

Figure 6.8

Prison Population Under Reduced Imprisonment Rate Scenario: Simple Flow Model

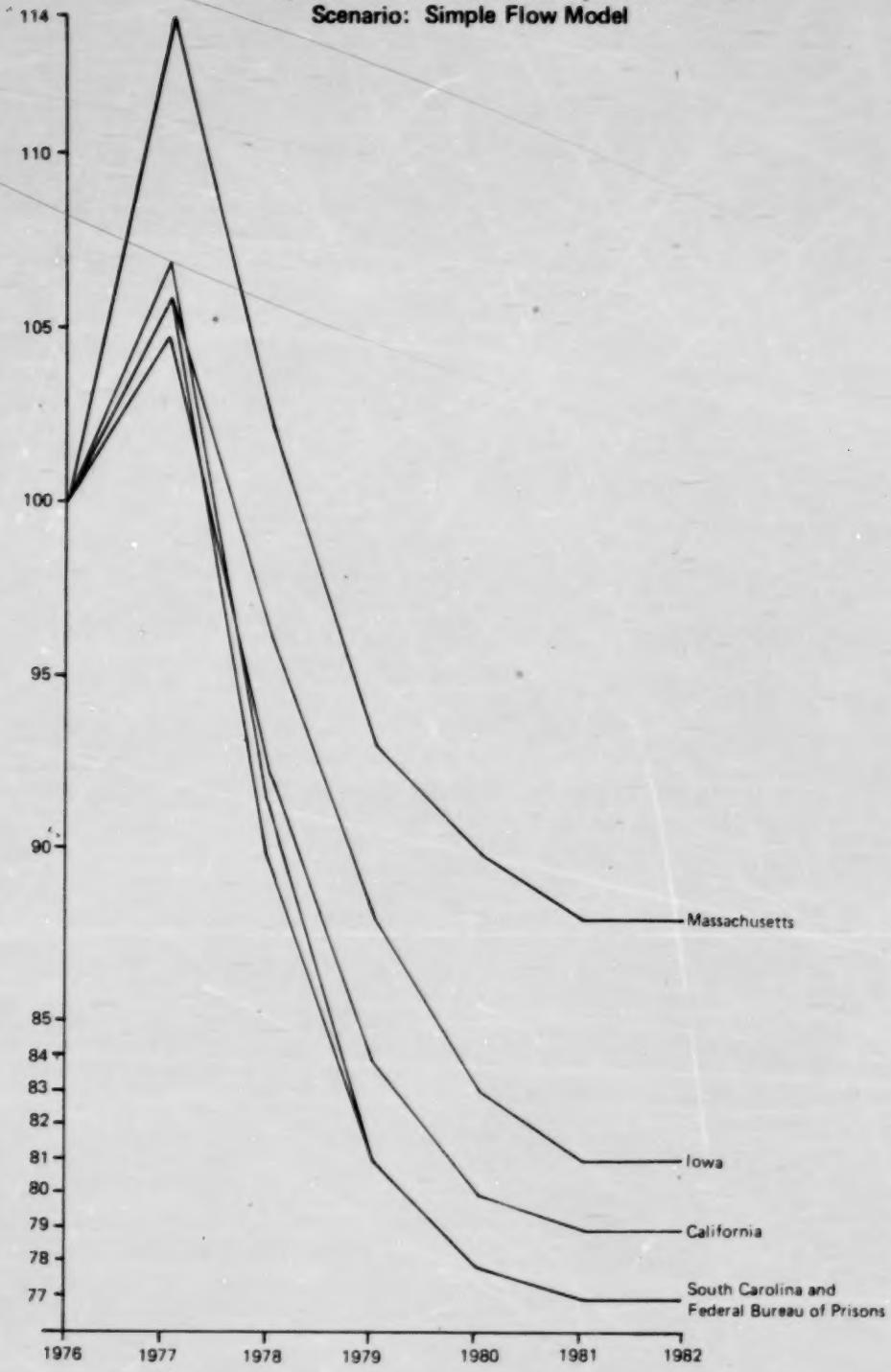
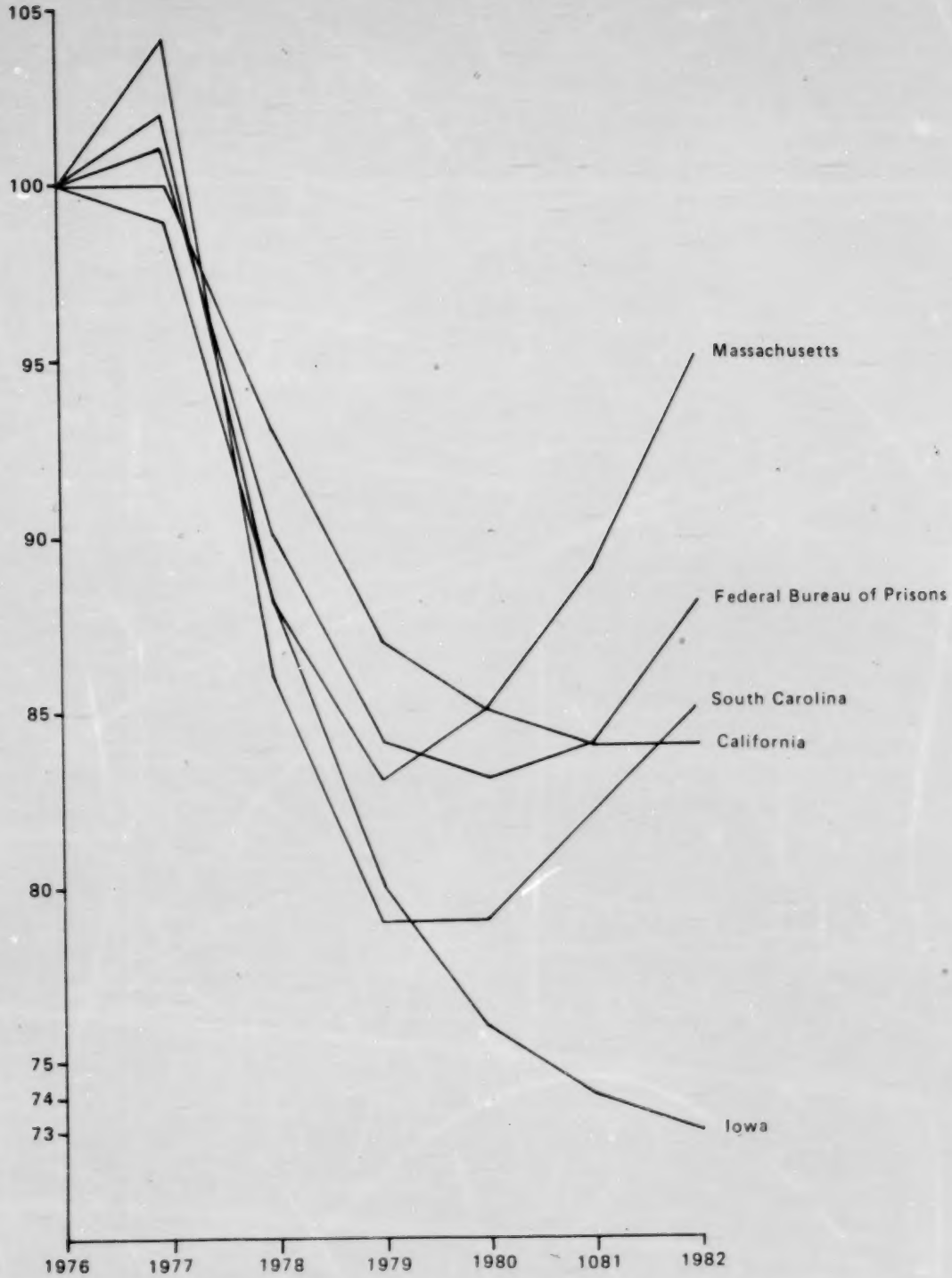


Figure 6.9

Prison Population Under Reduced Imprisonment Rate Scenario – Dynamic Modeling Approach



of time served in response to excess capacity, another possibility is that obsolete unused capacity will be abandoned. This effect will also be felt differentially across jurisdictions. Where the inclination to adjust effective sentence length predominates, the tendency is for time served to turn upward after an initial drop. Where the "capacity closing" propensity is dominant, populations are likely to remain at the new lower levels throughout the reduced imprisonment scenario.

Branch Points

Two branch points occur in determining even the basic form of this scenario. One was suggested in our discussion of the main scenario's basic motivation. That is, the indicators of declining improvement rate and sentence length could arise in a number of contexts other than the one we have chosen. For example, the system's individual adjustments could arise, not as the efforts of each component to stabilize its own and the total workload; but rather as a part of an overall feeling that among alternative sanctions for aberrant behavior, imprisonment is being overused. The reduced imprisonment scenario would then be part of a "general softening scenario,"* a more direct counterpart to the general law and order scenario described above. Our judgment, however, is that local prosecutors and judges are not likely to embark upon such a source in the period being forecast. Indeed, the poll data available, while always a weak reed on which to lean policy or its assessment, point in exactly the opposite direction. Over the past years, an increasing proportion of the public has felt that the criminal justice system is too lenient with too many criminals. Thus, our main scenario's political context seems much more plausible than that of the branch point.

Another possibility is that declining sentence lengths could occur as an effect of determinate sentencing legislation. In some jurisdictions for some offenses, the maximum periods selected to apply the determinate sentencing concept may be lower than the current practice. For example, in California's new determinate sentencing legislation, a Robbery I conviction without enhancements, but with maximum good time, would result in 24 months of time served. The median time served for this offense in recent years, as ranged from 31 to 46 months.[4] To the extent that this disparity is typical; attacks on indeterminate sentencing could form an important part of a reduced imprisonment scenario.

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* Possibly including extensive decriminalization of victimless crime.

If we return to reduced imprisonment as originally defined, as a crowding and response scenario, a branch point arises which may be said to "move through the scenario. That is, it can be objected that once the policy shifts make themselves felt and the crowding is relieved, there will be a return to business as usual, at least until the next crisis. However, an alternative possibility, and an altogether plausible one, is that during the years required to relieve the overcrowding, the new sentencing and other practices develop a momentum of their own. After some time, the definition of business as usual may change; a new sense of "what is normal" may emerge. The scenario which began as a crowding-relief scenario could easily develop into the general softening alternative in which incarceration rates and sentence lengths stabilize at the revised lower levels. Especially, if the recent apparent declines in crime rates prove to be real and lasting, this branch point in the reduced imprisonment scenario could exert long-term downward pressure on the nation's correctional population levels.

Mandatory Minimum Policies

Personal-danger Priority

Basic Description

This scenario is organized around a more stringent application of the priorities of the criminal justice system. Under the hypothetical policy change, energies and resources are assumed to be focused much more sharply on crimes against the person: homicide, robbery, nonstatutory rape, and aggravated assault. The scenario asks, what would be the effects on correctional populations of policy changes that had the following indicators: The probability of imprisonment given a conviction for a crime in the so-called "victimless" category (e.g., drug possession) is assumed to drop by 40 percent. For nonviolent property crime, such as burglary or larceny, this probability is assumed to drop by 20 percent; but for any violent crime, the probability of imprisonment given a conviction is assumed to increase by 40 percent. We have shown above that variations in the 20 to 25 percent range are well within the actual experience of most jurisdictions. Policies discussed in the personal-danger scenario and persistent offender scenario, which involve potential changes in the 40 to 50 percent range, are thought to be the greatest possible as a result of altering priorities and reallocating resources. The present scenario assumes no change in court-imposed sentence length or in parole policy, with the exception described in the next section.

Motivation and Political Context

The primary motivation of the scenario's policy shift is to reallocate the scarce resource of correctional space and funds in the direction of personal-danger crime. Its emphasis is on type of offense, rather than on type of offender. Since the possible mitigating effects of the absence of prior criminal history would be lessened in this scenario, the effect of the emphasis on crime type would be to increase the fraction of prison admissions made up of first-time felons. While this would not be an explicit goal of the policy, it is assumed to be acceptable under a view of imprisonment as general deterrence rather than, say, incapacitation. That is, because the scenario's emphasis is on certainty of imprisonment for personal-danger crimes, rather than on the severity of the punishment, there is no pressure from its proponents to lengthen sentences or time served.

A central feature of the political context, reflected in the scenario's sharp increase in the probability of imprisonment given a violent-offense conviction, is an assumed "two-year mandatory minimum" intervention by the State legislature. That is, under current policy, after such a conviction a sentencing judge would have the options of imprisonment, straight probation, or probation with jail. Under the hypothetical personal-danger priority policy outlined here, judicial latitude would be relatively limited: He would have to sentence personal-danger felons to two years in prison. While critics of such a scheme argue that it would create dangerous inflexibilities in the system and possible extreme overcrowding in high-crime periods, its defenders are motivated by a belief that the resource and space economies from other offense categories would allow overall correctional population levels to remain stable or even to decline.

It is obvious that prosecutorial practices would be an important factor in determining the effects of new "declaratory" priorities. Raising or lowering the probability of imprisonment given a conviction depends crucially for its full effect on the type of convictions that are sought. Another feature of the political context concerns decriminalization. The scenario does not assume any explicit legislative steps to remove all criminal penalties for victimless crimes, but this is because the de facto decriminalization is assumed already to have occurred. Typically, legislative initiatives of this type lag behind arrest, indictment, and incarceration practices by quite a bit; when such initiatives are taken they simply ratify the practices of police and prosecutors. Thus, it may be that the new resource economies that any plausible (formal) decriminalization can yield at the corrections end are rather small. The largest single category is drug pos-

session, and only in a few States is the percentage of inmates admitted for all drug offenses larger than 10 percent. Moreover, of these, many of the "possession" admissions are really sales cases. A formal decriminalization of possession would simply result in a relabeling of these by prosecutors, who would henceforth pursue them as sales offenses.

Model Simulations

Figures 6.10 and 6.11 depict the results of the simulations for the personal-danger scenario. In the simple flow model, while California shows a slight increase in prison population compared to the base run in later years, all others show levels lower than the base run. In the dynamic model, California behaves much as it did in the flow model, whereas Iowa shows a slight decline. In Massachusetts, prison population is higher than in the base run in 1978 and 1979, but after that dips down to slightly less than the population in the base run. South Carolina shows a substantial increase over the base run.

In the dynamic model, higher or lower populations reflect whether the scenario assumptions produced higher or lower flows into prison of new court commitments. By examining prison population and court commitment data, we estimated the fraction of prison admissions represented respectively by personal, property, and "victimless" crime. We then calculated how the scenario's assumptions concerning stricter priorities for violent crime would affect the composition and flow of court commitments to prison. In all cases, the change in the overall fraction of defendants imprisoned was relatively small, with a 12-percent increase in Massachusetts being the largest. The marked increase in South Carolina reflects the additional impact of increased minimum sentences: Unlike the other States, the average sentence in South Carolina was sufficiently short that the minimum sentences imposed in the scenario raised the average effective sentence quite substantially. The effect of the mandatory minimum in this State was to limit the Parole Board's ability to adjust time served in accordance with population levels, and indirectly to force an increase in those levels.

Branch Points

The most important branch point in the construction of the scenario concerns the place of burglary. The main scenario assumed that burglary was not a personal-danger crime. It included homicide, nonstatutory rape, robbery, and aggravated assault, while excluding larceny and auto theft. In high density,

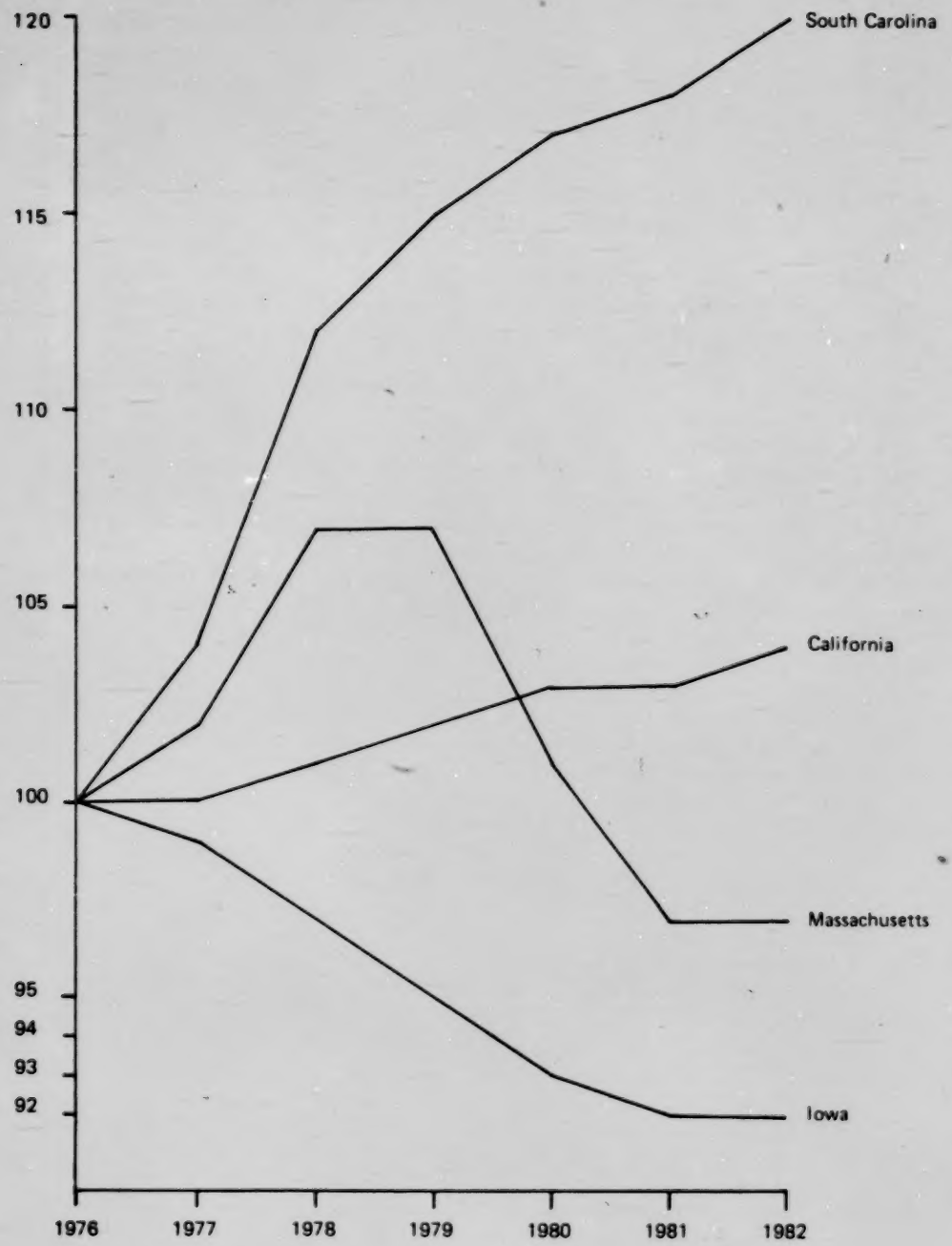
Figure 6.10

Prison Population Under Mandatory Minimums – Personal Danger Scenario – Simple Flow Model*

*Not applicable for the Federal Bureau of Prisons

Figure 6.11

Prison Population Under Mandatory Minimums – Personal Danger Scenario – Dynamic Modeling Approach*



*Not applicable for Federal Bureau of Prisons

industrialized urban areas, there is a tendency to think of burglary as a pure property crime, close to the latter two. Where rural, small town or suburban attitudes prevail, burglary is often regarded as closer to the personal-danger class. Since there are more than 500,000 burglary arrests in the nation each year, whether or not they are treated as personal danger crimes is crucial for estimating the policy's effects on correctional populations. An alternative form of the personal-danger scenario could include burglary and measure the correctional effects.

In practice, these effects would be highly variable around the country. Massachusetts, for example, already approximates an imprisonment policy of personal danger without burglary: about 75 percent of its inmates were admitted for violent offenses, only 14 percent of the total for property crimes; only eight percent of the prison population was imprisoned for burglary.

But this means that an adoption by such a State of a personal-danger-with-burglary imprisonment policy would exert strong upward pressure on incarcerated populations. Under current policy, large numbers of convicted burglars avoid prison. In a State such as Mississippi, however, where almost half of the inmates were incarcerated for crimes where no injury was threatened and 26 percent are serving time for burglary, the mix of effects is different. A pure personal-danger policy (no burglary incarcerations) would require changes in sentencing policy, but might be accomplished without additional population increases.

There would also be differential effects on the composition of prison populations. In general, a policy concentrating on personal-danger crime will raise further the already large share of the inmates made up of minority groups. The inclusion of burglary in the personal-danger category would dilute this tendency somewhat, since the racial-minority concentration for burglary is less than for other personal-danger crimes. Also, other things being equal, any mandatory minimum form of personal-danger priority would tend to increase the fraction of new admissions made up of first offenders. But many doubt that other things would be equal; a reaction against the prospect of imprisoning large numbers of first-time convictions might soften the effects of any legislative intervention in sentencing. A major branch point depends on how the other parts of the system exercise discretion in applying the mandatory minimum provision. The severity of the penalty makes it plausible that means of circumvention would be found. Increased charge- and plea-bargaining, before the conviction and sentencing juncture is reached, look very plausible in this scenario; and further support for skepticism about the legislature's ability to limit

discretion is presented in the other mandatory minimum scenario, immediately below.

Persistent Offender Priority

Basic Description

This scenario is a hypothetical attempt to concentrate the scarce resource of imprisonment on persistent felons. It focuses on type of offender rather than type of offense, as did the previous scenario. An effect of this, and another point of distinction from the personal-danger alternative, is that it extends the threat of imprisonment to a much broader spectrum of criminal activity than does personal-danger priority: Repeat burglars, larcenists and care thieves who would have encountered a diminished probability if imprisonment under a personal danger emphasis would face an increased threat under the policy assumed here. The scenario is also distinctive in its 50-percent lengthening of sentences and time served for the target group (court-imposed sentences and time served were raised for all convictions in general law and order, but only the 15-20 percent range; they were held constant for violent crime in personal danger priority, except insofar as average time served might be affected by the legislatively mandated minimums.) While this may seem large in percentage terms, its effect is to lengthen the persistent offender's average time served from its present level of two years to three years. Thus, the scenario's main assumption was a three-year legislated mandatory minimum imprisonment for any convicted felon who has also served time in prison during the previous five years.* This is further assumed to stimulate a greatly increased concentration of prosecutorial energies and resources on cases involving repeat felons.

Motivation and Political Context

According to several studies, a relatively small number of offenders may be responsible for a disproportionate number of crimes. In a study of Philadelphia youth, Wolfgang and his colleagues estimated that six percent of an entire birth cohort accounted for 60 percent of its total serious crimes. In Washington, D.C., the Institute for Social Law and Research found

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* This is well within the range of mandatory minimums under consideration around the country. For example, Iowa has adopted a five-year mandatory minimum for conviction of a robbery committed with a firearm.

that of 73,000 Superior Court cases, seven percent of all persons arrested accounted for nearly 25 percent of the total caseload. Although the inferences to be drawn from these data are controversial, they have had an undoubted influence in providing the political context for the type of policy envisaged in this scenario.

The scenario depends heavily on assumed changes in the practices of prosecutors. The shifting of resources to "career criminal" units like the Bronx District Attorney's Major Offense Bureau, which screens cases for a mix of seriousness of offense, prior convictions, and strength of case, would be typical of such a scenario. Plea-bargaining is sharply curtailed, limited to the most serious count of the indictment or one count below, offered at the earliest possible moment, and nonnegotiable if refused. As in the New York case, special trial sessions might be provided exclusively for the litigation of these cases; these would enable quicker trials with a presumably higher quality of prosecution, made possible, for example, by the greater availability of witnesses and familiarity of district attorneys with the actual investigations.

Although the effect of such a policy on actual crime rates is uncertain, its widespread application could have major implications for corrections. Some effects on size of populations are discussed in the next section, but the policy can affect population composition as well. The fraction of inmate totals consisting of former prisoners would rise, as more "hard cases" were imprisoned for much longer periods of time. In turn, this might increase the ratio of inmates requiring maximum-security institutions to those deemed suitable for lower grades of custody.* And in various ways, this could further reduce the effectiveness of alternatives currently available for dealing with the overcrowding problem. For example, we discuss below the possibility that reclassification of institution and inmate types might be one way the system uses administrative flexibility to compensate for space inflexibilities. If the new admissions were to contain a substantially higher fraction of cases requiring high secruity, much of this administrative flexibility would be lost.

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* It should be noted, however, that repeat offenders are not always the highest custody risks.

Model Simulations

Figures 6.12 and 6.13 display the simulation results for this scenario. The two models were forced to use different formulae for translating the scenario's assumptions into simulation terms. In the simple flow model, a partitioning of the inflow into prison was possible. "Admissions who are former prisoners" was disaggregated from the total of admissions, the policy's differential impact on the two groups calculated, and these new imprisonment rates entered in the flow model for each year 1978-82. In the dynamic model, the separate entry for the annual admissions cohort was not practical. Thus, a "smoothing" formula was used. Fragmentary data suggest that approximately 30 percent of prison admissions are former prisoners. It was assumed for the simulation that this fraction would rise by one-third, to 40 percent, under the scenario's new policy. The three-year mandatory minimum represents a 50-percent increase in average time served for persistent offenders; the simulation translated this into a 20-percent increase in time served during the forecast period (a 50-percent increase in time served for 40 percent of admissions). This formula will produce some distortion in the early part of the forecast, because of the lack of separate entries for each entering cohort.**

The simple flow model exhibits the expected increase in prison population compared with the base run. As in the reaction to the general law and order scenario, the dynamic model exhibits a smaller percentage increase in prison population than does the simple flow model. As the tougher mandatory sentences begin to affect prison population levels, two of the dynamic processes are stimulated: Parole Boards try to relieve potentially serious crowding by adjusting downward the time served by "short termers" over whom they still have considerable discretion. Also, pressures build up for new construction. These two effects are felt differentially. States with histories of recent construction such as South Carolina show larger percentage changes in prison population than States like Massachusetts that control population mainly through sentence adjustments.

** Sensitivity runs with the simple flow model indicate that inaccuracies from not disaggregating persistent offenders would be generally no more than 10 percent in the simple model. We would expect the error to be less in the dynamic model, due to compensating feedback loops.

Figure 6.12

Prison Population Under Persistent Offender -- Simple Flow Model

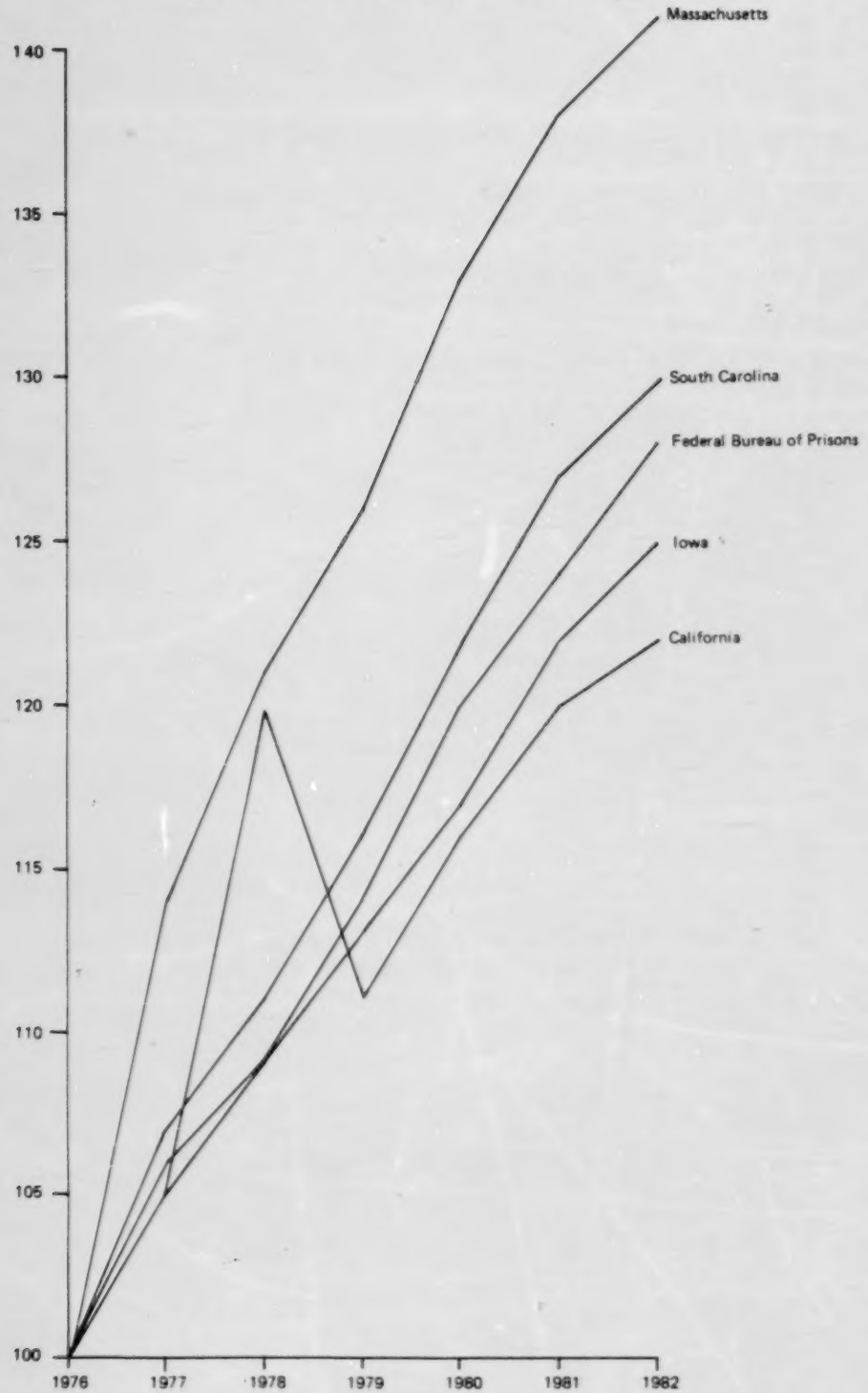
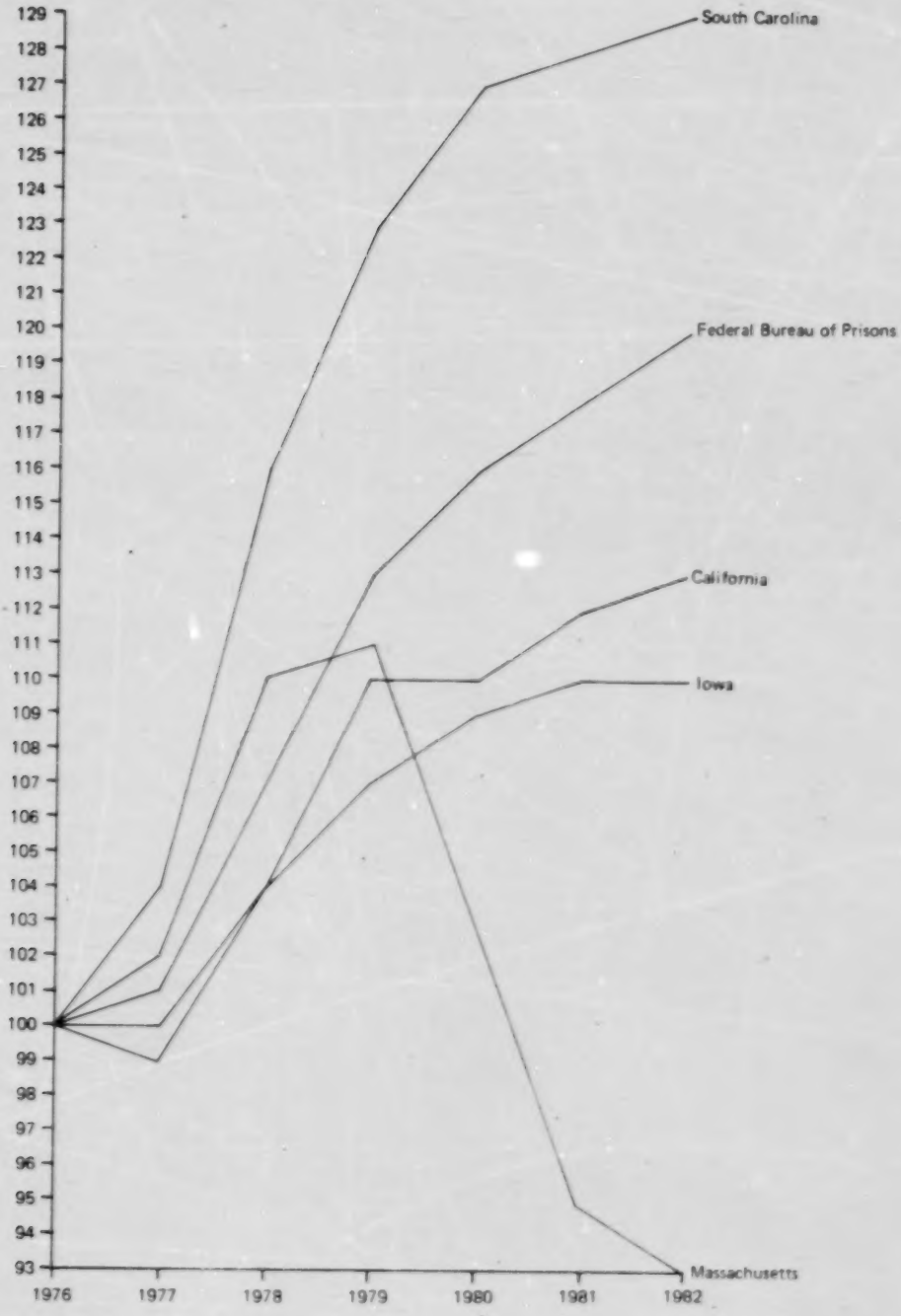


Figure 6.13

Prison Population Under Persistent Offender Scenario —
Dynamic Modeling Approach



Branch Points

The most important branch point in this scenario, particularly in its duration of application, is whether the trajectory of the initial policy shift is maintained or deflected during the forecast period. As experience with Bronx Major Offense Bureau suggests, the incarceration rate for repeat felons, measured as a ratio of imprisonments to convictions, can be raised by the type of measures described above. In cases prosecuted by the Major Offense Bureau, both the probability of imprisonment and the length of sentence were significantly higher than usual. A study of the Bronx innovation showed a 60-percent conviction rate for the most serious count of the indictment. In similar cases traditionally processed, plea negotiation resulted in only six percent convictions on the top count. While the Bronx project selected cases with a better than average chance of conviction, such differences in conviction levels could obviously produce a substantial increase in the flow of offenders with long sentences to prison.

This scenario assumes that effects like those claimed by the Bronx project could be replicated elsewhere, and are due to the prosecutor's vigor rather than the selection of easy cases. Questions arise, however, as to what happens elsewhere in the system, either to allow this to happen or to diminish its effects. The first concerns productivity trade-offs. Given the stiff penalties and limitations on plea-bargaining at later stages, both defendant and defense lawyer have a strong incentive to demand and prolong trial. In the courts established to apply the stiff New York drug laws, the average number of appearance per case was 21, compared with other courts' average of eight to 10. In some sense, the increased productivity in one part of the system was offset by a decreased productivity elsewhere.

Whether such disparities are workload responses or reactive shifts in policy (e.g., prosecutors feeling that it is unfair that harsh legislated penalties be imposed), they may operate to mitigate or even nullify the original policy intention. In New York, for example, when the legislature imposed a mandatory prison sentence for any felon with a prior felony conviction, the ratio of imprisonments to convictions did rise, but the prison pressure (at least from this law) was relieved by a sharp decline (40 percent to 24 percent) in the percentage of arrests of such offenders which led to indictments, and in the percentage of indictments leading to convictions (90 percent to 70 per-

cent).* Overall, the percentage of arrests of prior convicted felons leading to an imprisonment fell under the mandatory minimum law from 20 percent to 13 percent. The point here is simply to emphasize our awareness that in accepting a "flat policy trajectory" throughout, we have made a controversial assumption at this branch point in the scenario's construction.

Structuring Discretion

Determinate Sentencing

Basic Description

This scenario reflects the recent attacks on the notion of indeterminate sentencing. In the form adopted by the main scenario,** this is attempted by concentrating authority over releas policy in the State legislature rather than in the Parole Board. Its basic features include sharply curtailed judicial discretion and reallocation to the legislature of substantial portions of sentencing authority that was previously shared by judges and parole authorities. Probation rates are assumed unchanged from current policy. Finally, legislatively determined sentences are assumed to be set at the level of average time served for each offense under current policy in each jurisdiction.

Motivation and Political Context

To reduce judicially imposed sentences, many jurisdictions have considered sentencing schemes that abolish Parole Board authority to establish prisoner release dates. To date, three States have passed such legislation -- California, Indiana, and Maine. In a number of other States (Oregon, for example) the plan is to retain the Parole Board but sharply limit its authority. Since the main scenario involves extensive legislative preemption, the following discussion concentrates on the former type of change.

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* Because of the small sample sizes used in this evaluation, the percentage figures may be more dramatic than the reality. See Joint Committee on New York Drug Law Evaluation, Final Report (June 1977).

** Others are discussed in the branch points, p. 194

The abolition of parole discretion necessitates redistribution of sentencing power to other agencies in the criminal justice system: prison staff, the prisoner (through good time), prosecutors, courts, or the legislature. Abolition of independent post-sentencing determination of a release date also makes prison populations more immediately predictable and less controlable. Conversely, the decision-making capacity of a Parole Board near the end of an offender's scheduled sentence makes prison populations less predictable in the short run and more controlable.

Parole, as the California experience amply demonstrates, increases the system's capability of adjusting prison population through implementation of centralized decisions. Unless executive clemency is applied to a large number of cases as a substitute for parole, determinate sentencing abolishes this flexibility. However, this use of executive clemency seems unlikely without the occurence of extreme overcrowding or Federal court intervention.

The three adopted measures differ radically in terms of where the Parole Board's former sentencing power is redistributed in the system; legislative proposals not yet enacted differ even more radically. All proposals legislatively enacted afford the sentencing judge discretionary decision between probation and imprisonment for first offenders convicted on most charges. This means that any scenario must estimate a probation percentage for these high-frequency criminal convictions, and requires the model runs to use current State policy consistently. Each enacted law exempts certain classes of serious criminal offenses from a probationary option, but even where prison sentences are mandated, the amount of judicial discretion in sentence-setting is substantial. The most extreme example is the Indiana legislation, where an offender convicted of burglary with two prior felony convictions is subject to a "flat-time" sentence between one and 17 years, depending on the discretion of the sentencing judge. In this setting, the redistribution of power that takes place when parole is supplanted is from paroling authority to judge. In Indiana, when an individual has two felony convictions, a judge can sentence a convicted offender to a determinate sentence between one and 17 years for unarmed robbery,

burglary, and auto theft; between 2.5 and 19 years for armed robbery; and between one and 19 years for battery with a deadly weapon. Obviously, the range of meanings given to the notion of determinate sentencing is very wide. Policy inferences drawn from general statements about it must be interpreted with extreme caution.

Model Simulations

Figures 6.14 and 6.15 depict the results of the simulations of the determinate sentencing scenario. In the simple flow model, all jurisdictions, with the exception of the Federal system, show slight declines relative to the base run. In the dynamic model, compared to the base run, this scenario shows declines in prison population in California and Iowa, an increase in South Carolina, and a decline followed by an increase in Massachusetts.

The results indicate the role of restricting parole. Fixed sentences make the prison population much more sensitive to the size of the inflow. Under flexible sentences, an increase in the inflow would begin to increase population, but then parole boards could reduce time actually served, so that population would increase less than the increase in inflow. With fixed sentences, an increase in inflow tends to produce a proportionate increase in population. Analogous changes occur for a decrease in inflow.

In the dynamic model, the policy changes in this scenario might have been expected to produce relatively small change in prison population. There are two reasons for this. First, the determined court-imposed sentences were assumed to match the existing values of time served. Secondly, the model generally is exhibiting small changes in offenders sentenced to prison after 1977. The two States showing the most change are California and South Carolina. South Carolina shows an increase because the flow of offenders imprisoned by the courts is increasing in the simulation.

In the model run, California's population declines because of the elimination of parole revocations. Under the assumptions of the scenario, released offenders no longer must meet parole conditions and cannot be reimprisoned through revocation of parole. In California, parole revocation is an alternative to the courts for imprisoning former prisoners who have committed new crimes, thus sparing the overloaded trial courts the need to handle the case. In the model, 80 percent of what would be parole revocations are assumed to be directed through the courts in this

Figure 6.14

Prison Population Under Determinate Sentencing Scenario
Simple Flow Model

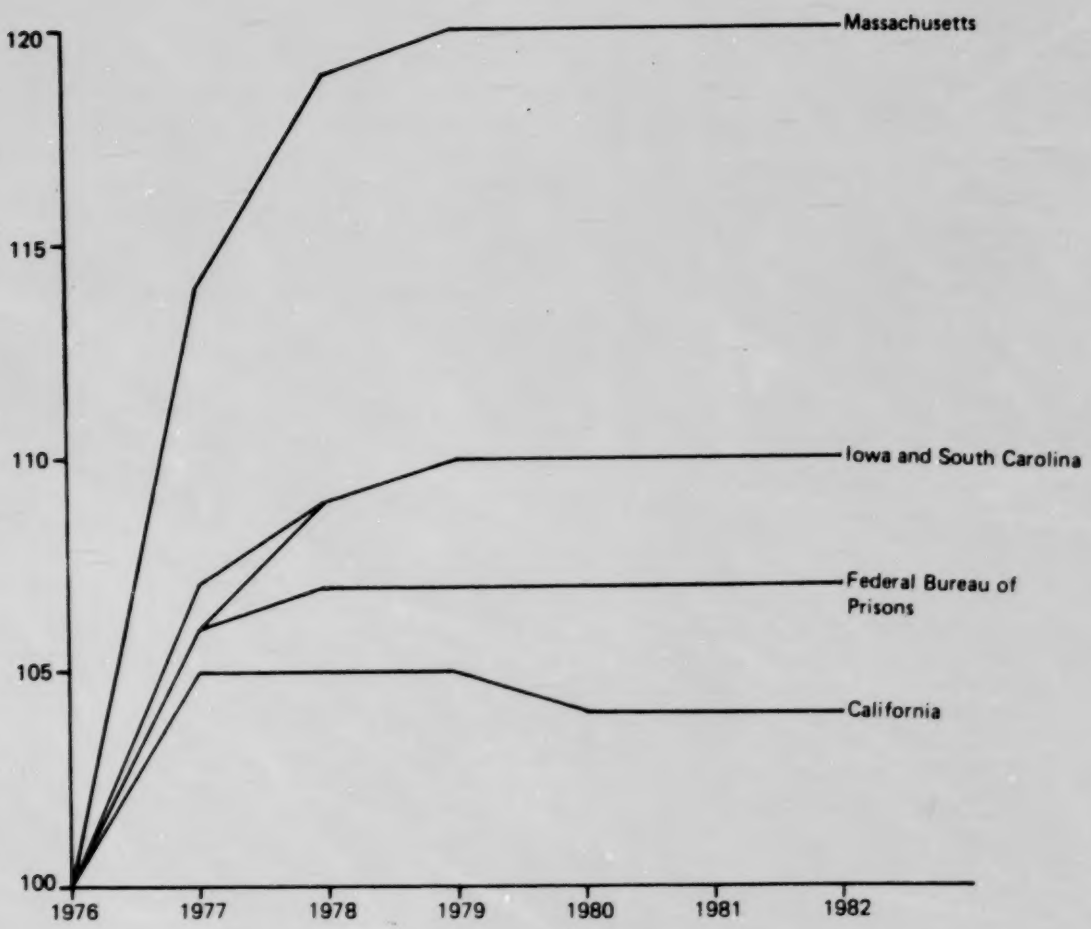
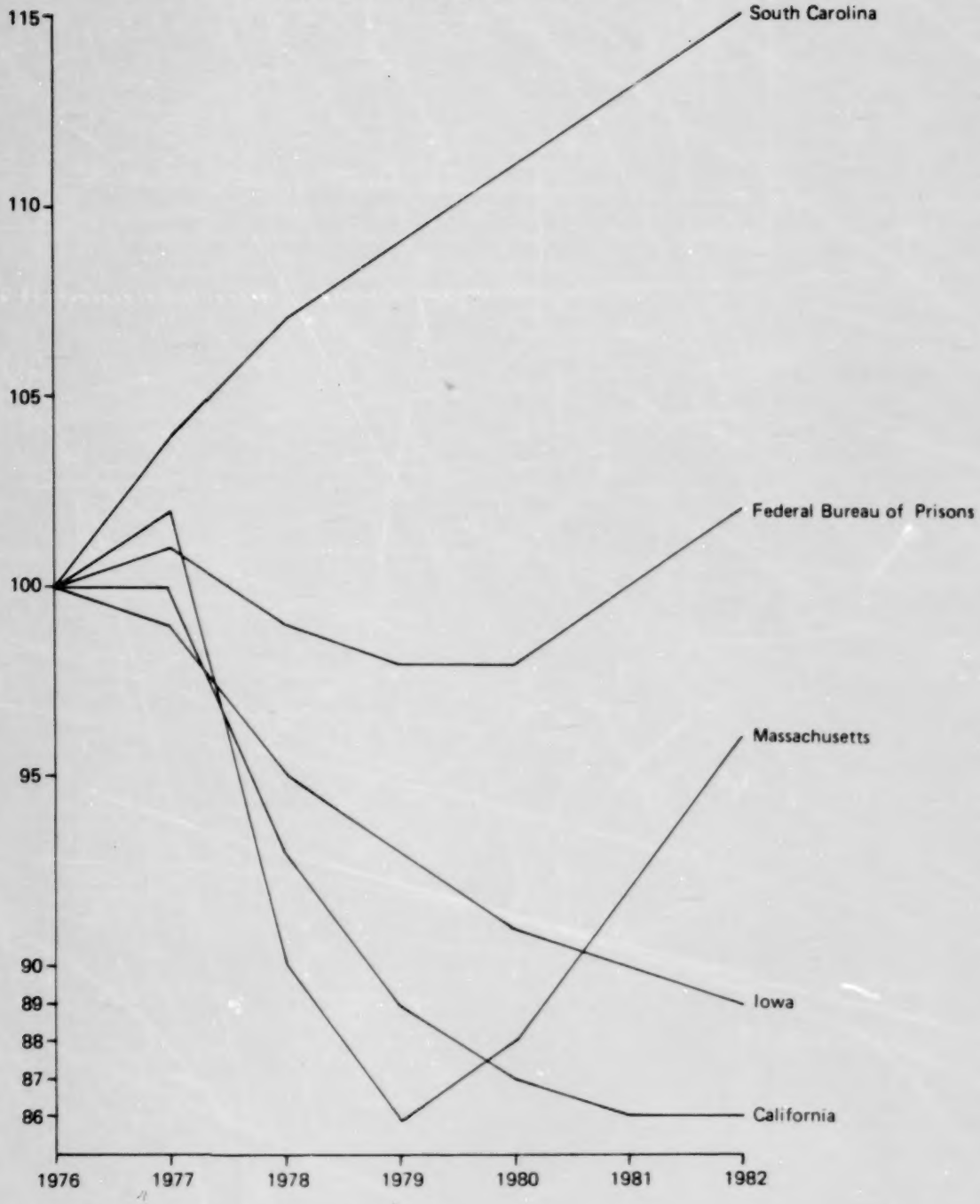


Figure 6.15

Prison Population Under Determinate Sentencing Scenario — Dynamic Modeling Approach



scenario. Because the courts are already overloaded they are unable to promptly pass all of this flow on to the prisons. The net result is that, although commitments from court increase some, the elimination of revocations causes a drop in the inflow to prison. Thus, the California prison population drops.

This effect is less pronounced in the other States where revocations form a smaller percentage of the inflow into prisons.

Depending on changes in offenders imprisoned and in the legislated sentence lengths, determinate sentencing, as pictured in this scenario, may increase or decrease prison population, but its main feature is to eliminate an adjustment mechanism limiting prison overcrowding. Under optimistic conditions, crowding will not occur, but the potential for increased crowding is heightened in all forms of the scenario.

Branch Points

As noted above, the institutional arrangements for applying determinate sentences may vary widely. Where Parole Boards are not abolished altogether, they may continue with sharply curtailed authority. Sentencing commissions may provide an intermediate body in which release policy is centered.

Different jurisdictions will also use different formulae in developing guidelines for determinate sentences. The point here is to emphasize that these formulae--for example, whether the legislature chooses the mean time served or the median--can be important. The original California legislation looked to the median, which is lower since prison sentences are positively skewed. Using the mean graphically illustrates the impact of "flat-time" strategy; although there is no intuitive reason to believe that choosing the mean should change prison populations, it does. Any system using the median as a base point reduces prison population due to the positive skew of prison sentences. Moreover, some experts feel that the use of mean value of imprisonment may reflect the selection of all but the most liberal of legislatures.

Other branch points, such as the possible momentum toward higher legislative sentences, can only be mentioned here. Once the legislature increases its control over sentencing policy, political pressures could easily lead to a competition among "get tough" proposals.

Another possibility is an increase in nonprobation crimes. If this occurs, it becomes a "mandatory minimum" vehicle for inflating prison populations. To some extent, plea-bargaining will offset some of the change's impact; however, if offenses such

as aggravated battery with a dangerous weapon or simple robbery become nonprobation offenses, the prison and jail population will increase substantially.

Finally, there is a possible branch point at "tampering with 'good time.'" When a legislature doubles prison sentences from the current mean or median and proceeds to "give back" the time by announcing 50-percent credit of a sentence to good behavior, a powerful tool for either penal inflation or deflation is created. The math is simple; a legislative shift from 50-percent to 25-percent good time represents a 50-percent increase in minimum effective sentence length.

Broader Policies

Judicial Intervention

Basic Description

This scenario concentrates on the impact of intervention in the correctional system by judges as reformers and system monitors, rather than in their sentencing role. While alternative forms of judicial activity are described in the branch point analysis below, the scenario's basic hypothesis concerns the possibility that the spotty pattern of court insistence on standards of facility adequacy will become the national norm. For modeling purposes, a formula that meshes various current actual (the Alabama case) and recommended National Clearinghouse for Criminal Justice Planning and Architecture standards has been used.

It is assumed that Federal and State correctional systems are subjected to court-imposed requirements that (a) all but minimum-security prisoners must be housed in single-occupancy cells, and (b) each cell must measure a minimum of 60 square feet. The model's translation of these requirements is discussed on the following pages.

Motivation and Political Context

The focus of activity in this scenario is the Federal courts. Some may object that the U.S. courts will be reluctant to act where State remedies have not been exhausted. However, Federal Courts in 12 States and the District of Columbia have issued decisions dealing with the totality of conditions of confinement, including overcrowding, in the entire prison system or its major institutions. Since August 1977, in the 14 States where there is similar pending litigation, only one case (Tennessee) is in a State court.

Two additional factors reinforce this emphasis on Federal intervention in State and local corrections. The first is the possibility of increased activism on the part of the executive branch of the U.S. government. Legislation has been discussed which would authorize Federal officials either to initiate suits or otherwise intervene in institutional cases where there is a pattern and practice of constitutional deprivation. Since the Department of Justice has access to both resources and expertise unavailable to other individuals or groups, this is potentially of major importance. The second point bears on the use of Federal efforts and monies, whether directly or indirectly, to develop codes of minimum acceptable standards for adult correctional institutions. While there is no guarantee that such codes will be applied by the courts, experience suggests a willingness on the part of many agencies to turn to existing standards and goals rather than try to develop their own.

Model Runs

For this and the next two scenarios, only the dynamic model seemed appropriate for a simulation. Figure 6.16 displays its results.

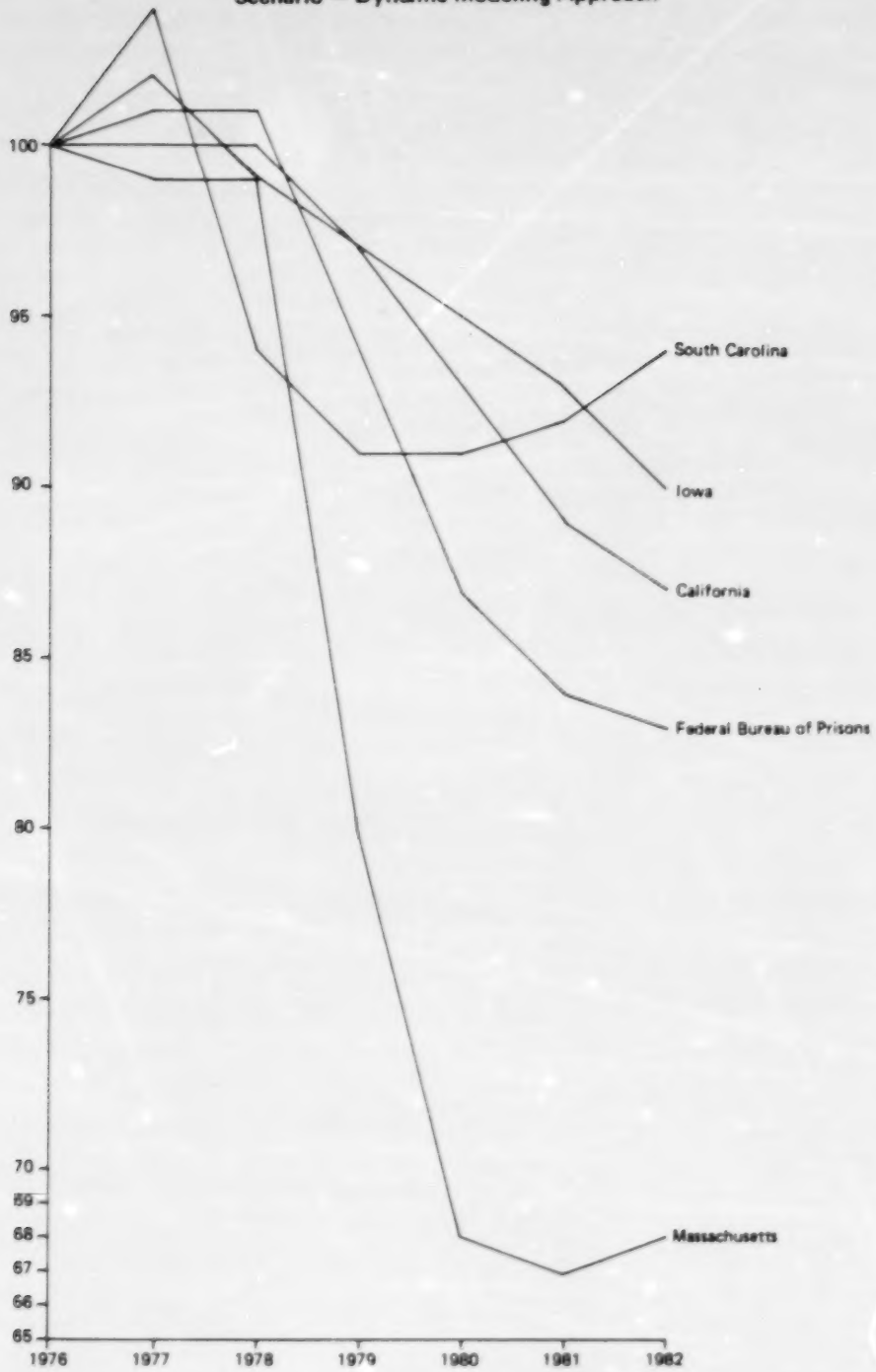
It may be useful to clarify some of the assumptions inserted into the model in response to the scenario's overall plan. First, it was assumed that the court-imposed minimum space requirement would result typically in a 20-percent reduction in "nonobsolete" facilities for each State. For these purposes, the typical case was taken to be a State with a system constructed at 50 square feet and subjected to a court-ordered minimum of 60 square feet (a 20% change). A more detailed assessment of the impact of a 60 square foot requirement on each jurisdiction would have required six separate simulations. Second, the model assumed that as a result of the court interventions there would be a change in State policy on closing obsolete facilities.

Under the old policy, obsolete facilities were closed only if there was excess capacity. Under the new policy, states were assumed forced to close the obsolete facilities even if there were no excess capacity, and indeed even if there were overcrowding. Finally, it was assumed that parole boards would play a part in attempting to bring populations in line with the lower capacities that followed the court interventions.

In the simulation, there are some major differences across States for this scenario. Iowa's prison population remains steady during the forecast period; this is largely because the model had "produced" an excess of capacity in 1977 for Iowa. Thus, the court-imposed reduction in capacity does not have a strong effect on population until after 1985.

Figure 6.16

Prison Population Under Judicial Intervention Scenario -- Dynamic Modeling Approach



At the beginning of the simulation, California had a smaller fraction of inmates in obsolete facilities than Iowa, and also had some excess capacity. Thus, the court interventions did not require sharp drops in population, but rather a slow decline as the old facilities are closed and Parole Boards adjust time served downward to allow this without major overcrowding. Moreover, in the simulation, these new and lower medians become the norm after a few years; this is plausible, because California's time-served levels were among the highest in the country when the model run began. There is an interesting feedback process here: the declining capacity exerts downward pressure on time served, which in turn relieves any other upward pressures that might be felt on capacity. Massachusetts seems to be a similar case.

South Carolina, however, is again an exception. Although the population does decline through the first half of the forecast period, by the end it is back up to 1977 levels. This is explained by two factors. South Carolina is a State which is assumed to build readily. This inclination is reinforced and the process accelerated by the court intervention. Moreover, the State's average time served was relatively low, in part because of the absorption of a significant number of short-sentenced misdemeanants from county jails. In any case, the model assumed that the further cutting of average time served was not available as a mechanism for relieving some of the crowding pressure. This placed an even higher premium on a building program that already seemed in line with the State's preferences.

In this context, the court intervention appears simply as a temporary setback to a building effort that would have been underway in any case. Some of the construction is necessary to meet the court requirements, but as it proceeds, the increased capacity is filled by the traditional imprisonment policies. By the end of the forecast period, the population levels start to rebound from the cuts imposed by court intervention.

Branch Points

The first two branch points in this scenario are obvious. One concerns the importance of the particular form of the space requirements. For example, the Alabama decision[5] mandates that each inmate shall have access to a minimum of 60 square feet of living space. In practice, this has been interpreted to mean that an inmate may be assigned to a 40-square-foot cell for both sleeping and storage of personal items of a larger total area is accessible during most hours. The Iowa maximum security cells average about 45 square feet; with minor reallocation of outside space, it could comply with this particular formulation without

major renovation. However, if court intervention focused on the upper range of current guidelines--such as the 80 square feet recommended by the National Advisory Commission on Standards and Goals Corrections Task Force--Iowa (unless the State were to build new institutions) would have to tear down the walls between every two cells. Obviously, this would halve the capacity of the system.

A second uncertainty concerns the future role of the Supreme Court. A respectable body of opinion contends that some of the recent court interventions will either be set aside or severely modified by the High Court. While this is speculation, it is of sufficient importance to require special mention.

A third issue involves the place of judicial intervention in forms other than the "pure space" requirement outlined above. In practice, many of these would be mandated simultaneously. Among the primary alternatives are health standards, program levels (academic, manpower training, special counseling), the outright closing of obsolete institutions, and intervention in the process by which inmates and institutions are matched for security-level (minimum, medium, maximum) requirements. Potentially, the last has tremendous significance. For example, at the time of the Federal court intervention, Alabama State prisons held approximately 4400 prisoners; 1500 (34 percent) were classified as requiring maximum-security detention and 400 (or approximately 10 percent) were considered suitable for community corrections. One feature of the court's monitoring was a solicitation for an outside evaluation of the classification. Of the 3200 remaining after the ban on new admissions and some adjustment in parole policy, only 104 (three percent) were regarded as maximum-security risks, whereas 1025 (nearly one-third) were regarded as acceptable for community-based corrections.[6]

Although there are many unanswered questions, the "reclassification form" of judicial intervention could have greater impact than the requirements on space adequacy, especially if it led to more extensive use of community corrections as a direct sentencing-placement alternative to imprisonment.

Federal Aid to Prison Construction

Basic Description

This scenario is organized around the hypothetical provision of one billion dollars in Federal and State funding earmarked for State prison capital costs over the forecast period. The money is allocated for construction to increase prison capacity, rather

than for renovation to meet court-imposed standards, which keep the number of available spaces constant. Legislation has been discussed which provides a 50-50 Federal-State match, and consequently, this formula is adopted here. No funding is provided for the variable operating and maintenance costs, but only for fixed or capital costs. The ratio of imprisonments to convictions is assumed unchanged from current policy during the forecast period.

Motivation and Political Context

Like the reduced imprisonment rate hypothesis, this is a response-to-crowding scenario. Its motivation is distinguished from the general law and order alternative, in which there was assumed either a tolerance or desire for long-term increases in prison population. The policy discussed in this scenario is an effort to relieve the crowding pressures created by past and current practices; it does not want those pressures either to continue or increase.

The 500 million dollar Federal figure cannot be more than illustrative. It is, however, well within the range of current legislative proposals. These amounts may seem large, but they must be considered in the context of current costs and population levels. In a 1975 Correctional Economics Center survey, 19 recently constructed or planned facilities were characterized by both type of institution and per-bed capital costs. For high-security institutions, including maximum and medium categories, the high average per bed was 57 thousand dollars; the low, 23 thousand dollars; and the overall average, 41 thousand dollars. For mixed-security institutions, comprised of one-third low-security inmates, the comparable figures were 36 thousand dollars; 22 thousand dollars; and 31 thousand dollars. When these figures are translated into capacity, the limited impact of even a billion dollars becomes clear.

More than 90 percent of all State prisoners are in the survey's high-security institution category, as defined above. If buildings of this type were concentrated in high average cost regions around the country, with allowances for an increase to 60 thousand dollars in the two years since the survey, 500 million dollars plus the 500 million dollars in State funds would provide about 16-17 thousand new prison spaces. If the construction occurred in States with court-imposed standards of adequacy, the costs might be driven up further, and the bed yield down. Thus, on a national base of 260 thousand State prisoners, a significant effect is difficult to visualize without a high concentration in a small number of States. If focused on the low-cost States, the space yields would be more than doubled; but in smoothing

the distribution of funds evenly around the country, or highly concentrating it according to the desires of the Federal government, major political difficulties exist.

Further skepticism on the short-term impact of Federal spending as an overcrowding relief is created by the long lead times for any program of this kind. The process is familiar, and many-staged. Given the sensitivity of the issue, any proposal for a national building program would stimulate a national debate on both merits and disadvantages. Groups such as the National Moratorium on Prison Construction are already deeply engaged in such a debate. In addition to months consumed on the Federal level, extra time would be required for States to decide on their participation. The process would be further complicated by the Federal limitation to capital costs, leaving the States to bear the variable costs (over three million dollars per year for a 400-bed facility) of operation and maintenance. Also, the actual construction can take as much as five years. The full effects of this scenario, even in its most optimistic form, would not be realized until after the forecast period was over.

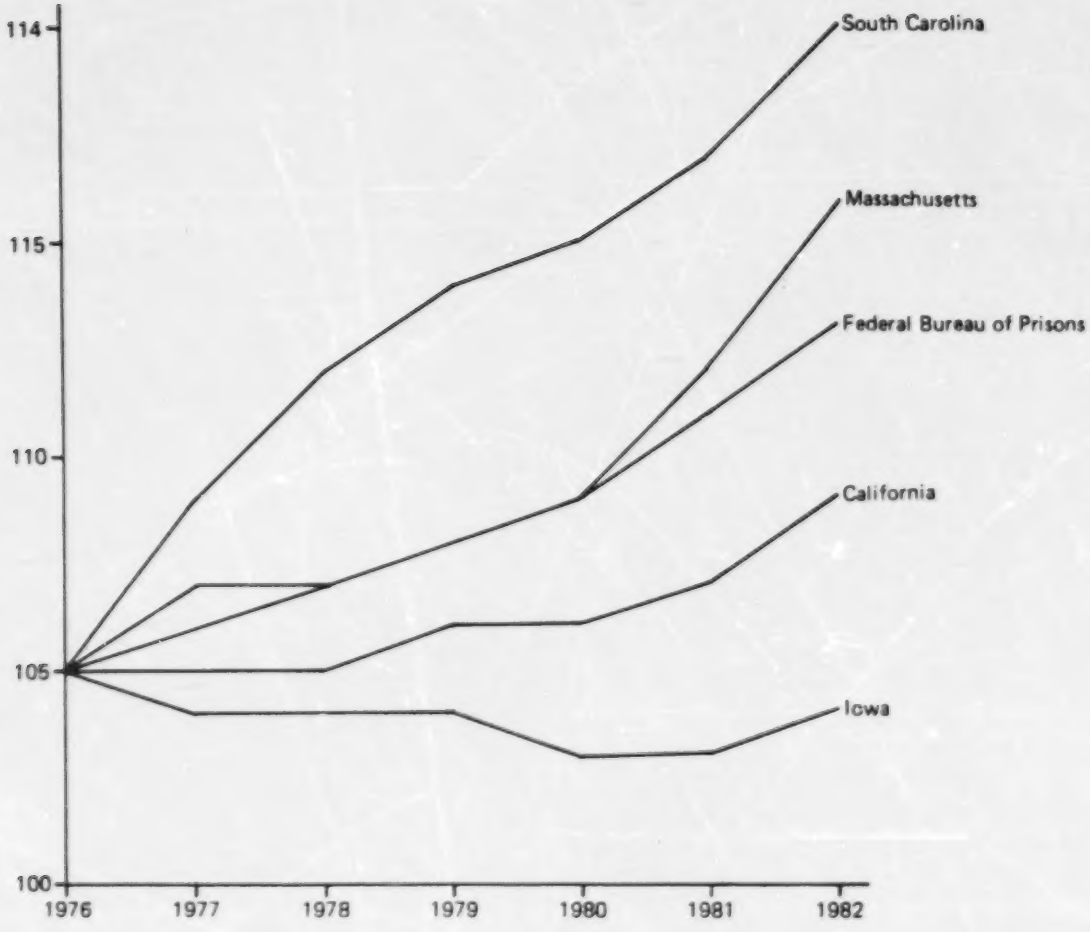
Model Runs

Figure 6.17 displays the prison construction simulation. Most of the factors explaining the model's performance in this scenario have been indicated above. In South Carolina, the inclination to build is reinforced by the infusion of Federal funds for this purpose; this State is a prime candidate for participation in any matching funds scheme. Also, in terms of construction costs, it is at the lower third of the range. The same number of dollars will buy more expansion in South Carolina than in Massachusetts or California, and South Carolina was assumed to create 2500 new spaces under the Federally supported building program. This may be compared with 500 for Massachusetts, 1500 for California, and 500 for Iowa. Given all this, it is to be expected that in the simulation the South Carolina population rose more than did the other States', and also that the longer lag for new construction than for renovation accounted for the bulk of the increase coming in the latter half of the forecast period.

In California, the creation of new capacity yields an excess throughout the period. Since sentences and time served are already high in this State, the model assumed no pressure to increase these further. This allowed the use of the construction programs for replacement of old facilities and allowed the population to remain stable while this process was underway. In Massachusetts, however, where time served had been shortened in the prescenario period to avoid overcrowding, the new capacity

Figure 6.17

Prison Population Under Prison Construction Scenario –
Dynamic Modeling Approach



does allow Parole Boards to allow the medians to creep up, fill the new capacity, and raise the populations.

Finally, in Iowa, the relatively large number of new spaces is consumed as part of a replacement of the nineteenth-century facilities, allowing populations to remain stable.

Branch Points

The alternative formulas of Federal aid are crucial variables. In the main scenario, a matching-funds option was made available to all States. However, in some types of legislation which have been discussed, the central purpose of the legislation was neither to relieve overcrowding nor to meet constitutionally implied standards of adequacy but rather to fight unemployment. In one proposal, to qualify for most of the prison capital funds the Public Works Act, a State was required to have an unemployment rate exceeding the national rate. The funds were to be disbursed by the Economic Development Administration. With this plan, States with prison overcrowding would not be assured these funds.

Another alternative formula might be the provision of money for "building to renovate" rather than "building to expand." In such a case (which might be deliberate or forced by court-imposed standards), a requirement might exist to close one old space for every new one opened with the new money. A third possibility is a formula explicitly targeted on building new spaces and expanding capacity only where rated capacity was exceeded by some margin of the total prison-plus-jail population. Most observers see major political difficulties in this formula, because it rewards the States having high imprisonment rates and past unwillingness to relieve prisoners of their poor conditions.

A final class of branch points concerns the effects of sentencing as the newly constructed spaces come on-line around the country. While the main scenario does not assume that any change in incarceration rates will occur during the forecast period, an interesting alternative is the possibility of a toughening in sentencing practices in the latter half of the five-year time frame. Indeed, if the capacity really does drive population, the notion is plausible that an expectation of new capacity might begin to affect sentencing as the construction progresses. This branch point could yield a situation in which offenders could be held in jails while waiting for the new prisons to open.

Federal Aid to Prison Alternatives

Basic Description

This scenario presents the hypothesis that rather than support the construction of new State prison capacity, the Federal government will provide 500 million dollars during the forecast period for an effort to increase the use of community corrections.* Legislation has already been discussed on this scale of 100 million dollars per year. In the scenario, these funds are assumed to be disbursed in a subsidy program that results initially in the diversion to community-based residential corrections of 50 percent of first time offenders who would otherwise have gone to prison. In the simulation, this fraction is assumed to decline as the community corrections spaces fill up.

Motivation and Political Context

Since the range of alternatives to imprisonment is very wide, our emphasis on community-based corrections must be justified. The selection results from the basic motivation underlying the scenario. In the reduced imprisonment rate scenario, another policy change in the ratio of imprisonments to convictions was examined. In that hypothesis, the motivation was stabilization of both workload and correctional populations at a practical level. In this alternative, however, the basic motivation is assumed to be a feeling that the reach of the criminal justice system is too onerous: that too many citizens are being confronted with the threat of imprisonment.

Any systematic application of such a view, on the model of the recent effort to accelerate the deinstitutionalization of juvenile status offenders, seems more likely to come from the Federal government than from local agencies subject to more immediate community political pressures. While this may seem paradoxical, the source of a substantial portion of available funding for established community correctional facilities is the Federal government. It has already played a major role in expanding community corrections to its current level. In addition, Federal initiatives have been proposed to advance the concept in various ways.[7] Although Federal efforts to support

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*Community-based corrections is defined as a residential facility that retains some supervisory function while providing a sense of independence. As long as no new offenses are committed, the resident may attend school and work, though he returns to the facility each night.

alternatives to imprisonment could also include programs such as nationally-funded probation subsidies, these could not be independently modeled within the limits of this exercise.

In estimating the effects on prison populations of an expanded use of community-based residential corrections, one must consider the substantial unused capacity in the existing system. There are between 1500 and 2000 facilities in the country today, averaging approximately 20 spaces each. Of these 30,000 to 40,000 spaces (covering a tremendous range of facility types), at least half may be unoccupied. For example, in Minnesota, a progressive State where extensive use of community corrections might be expected, occupancy rates for houses surveyed ranged from 38 percent to 59 percent. Thus, to the extent that community corrections is regarded either as a safety valve for prison overcrowding or as a sentencing alternative to prison, the capacity may already exist to handle as many as 20,000 diversions before new expansion becomes necessary.

While the scenario's primary motivation for community corrections is sharp reduction in the imprisoned population, comparative cost advantages are also cited by its proponents. These are difficult to assess. Halfway houses occupy two roles within corrections: serving clients from other criminal justice programs (such as probation and parole), and providing direct sentencing alternatives. Since the second use is currently limited, any past surveys of existing facilities and costs reflect the lower security and program requirements. In the scenario, however, use of the direct sentencing alternative is assumed to increase. More offenders go to community corrections who would otherwise have gone to prison, and this dictates higher than average costs. For the community corrections facility providing "comprehensive in-house services," the current mean annual cost is approximately 8000 dollars (22 dollars per day) per inmate. This can be compared with a 7000-dollar annual operating cost for a jail inmate, and approximately 8000 dollars for a prison inmate. Thus, it is clearly no less expensive to maintain offenders in halfway houses than in prisons.* If something over eight thousand dollars is taken as a reasonable estimate of the annual cost of community corrections which are used as direct sentencing alternatives, or 40 thousand dollars per space over the forecast period, approximately 12,000 spaces could be funded with the 500 million dollars.

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*So far as new facilities are concerned, community corrections rarely involve new construction, and thus the initial capital costs are obviously much lower than for prisons.

Given the existing excess capacity in the system, an increase in the use of community corrections as a direct sentencing alternative would not initially require more spaces, although some upgrading might be necessary.

Model Simulations

Figure 6.18 shows the results of the simulation. The Dynamic Model assumed that in the first year of the forecast period, 50 percent of all first-time offenders who would otherwise have been imprisoned were diverted to community corrections under the new policy. Repeat offenders were assumed to have their imprisonment rates unchanged. Based on rough data for the five jurisdictions, community spaces were assumed available at the level of 10 percent of prison capacity.

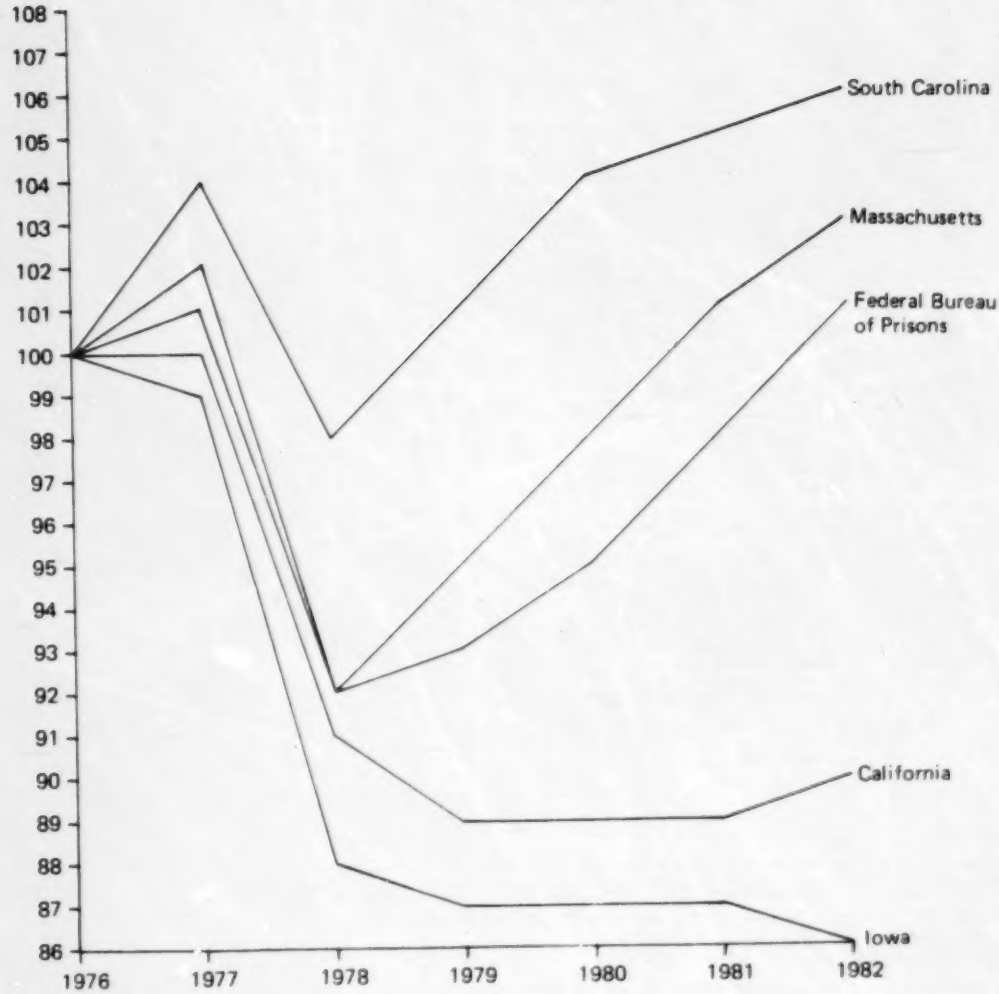
The general simulation result is that after an initial effect in draining off part of the prison population, community corrections performs this function at a slower rate as capacity begins to fill up. The populations tend to drop in the early part of the forecast period, and to build up again toward the end of it. The exception is Iowa, where the population does not rebound. The model suggests that the excess prison capacity created by the drop in population allows the State to close obsolete facilities. With less capacity, the population is constrained at the lower levels permitted initially by the community corrections program.

Branch Points

Many obstacles to the implementation of diversion programs can be envisaged. Most simply, Federal funds could be made available for community corrections but deliberately ignored by the States. Recent experience with the Federal "carrot" for State deinstitutionalization of juvenile status offenders shows that such initiatives may be rejected. Another possibility is that funds may be reappropriated to an alternative other than the one intended. In California, many probation subsidy sponsors were dismayed to discover increasing "probation-with-jail" in counties which still drew the subsidy. Furthermore, even when Federal monies are used in expansion of community corrections spaces, it is impossible to control local judges' practice of placement. It is entirely plausible that these new spaces would be filled with people who would not have otherwise gone to prison or jail. The Federal effort to support alternatives to imprisonment could find itself an extension of imprisonment, even if in less intrusive a form than prison. This seems to be happening in Iowa, and the California experience indicates that

Figure 6.18

Prison Population Under Prison Alternatives Scenario — Dynamic Modeling Approach



similar lags between State intentions and county performance exist. It is unclear that incarceration policy can be calibrated all the way from the Federal government to the local level.

Finally, there is no speculation in the main scenario on the future of this policy shift after the forecast period. It requires nearly 100 million dollars per year to maintain. If Federal policy were to reverse itself in 1982, and the community corrections facilities were by then operating at capacity, a new prison overcrowding phase could occur.

Conclusion

This section summarizes our view of the current policy agenda for dealing with the problems described above. To provide the policymaker with a broad view of relevant options, we have included both policies currently under discussion as direct responses to prison problems, and policies not explicitly addressed to prison crowding but of potentially major significance.

An economic analogy may be useful in categorizing these policies. In the category of direct policy responses, we distinguish among four types of effort for bringing demand and supply into line: (1) reduce the demand for prison capacity by decreasing the imprisonment rate of those convicted of crimes, and the time served by those imprisoned; (2) reduce the prison capacity by subjecting prisons to court-imposed standards of adequacy, and then allow the judiciary to ensure that the demand does not outrun the reduced supply; (3) reduce the demand for prison capacity by diverting a portion of this demand to a different market, namely that of community corrections; and (4) expand the supply of prison capacity through new construction.

In the category of indirect effects, we may distinguish these (not mutually exclusive) alternatives: (1) pursue policies that allow the demand for prison capacity to rise while providing funds to expand capacity commensurately; (2) pursue policies that have variable effects on prison-capacity demand by adjusting the composition of the demand variable (new court commitments) at sentencing; and (3) pursue policies that have variable effects on prison-capacity demand by adjusting the State's ability to manipulate the demand at the release juncture.

Each of these policy types is addressed in the scenario-modeling exercise above. Summary comments are offered here. At the conclusion of the chapter the Dynamic Modeling results are graphed on a State by State basis to allow comparison of the simulated

policy effects.* Among the direct policy responses, the Reduced Imprisonment rate scenario corresponds to the first type of demand reduction. Two results of the simulations are noteworthy. First, they dramatize the fact that a response-to-crowding policy does not necessary exert long term downward pressure on prison populations. Once the crowding has been relieved, population levels in many States will tend to return to earlier levels. Second, however, the simulation reminds us of prison populations' extreme sensitivity to relatively small adjustments in sentencing and release policies. Except in rare cases, changes in the range of 15-20 percent at the sentencing and release junctures seem quite sufficient to bring current capacities and populations into line during the forecast period. It is questionable, however, whether even calibrations of this magnitude are consistent with other values and perceptions in the area of justice and public order.

The second direct policy response is reflected in the judicial Intervention scenario. To state that this developing pattern constitutes a revolution in American corrections is not an exaggeration. Perhaps the main summary comment is that the activity has introduced a major instability in both forecasting and correctional planning. It is likely, for example, that plans already adopted for construction (and perhaps even construction already under way) will have to be revised to take into account recent and future court interventions. Before taking any action regarding facilities, a sensible planner would assess not only projections of prison inflows and releases, but also estimates of the status and likely direction of litigation in the courts. Corrections commissioners have always had little control over the number and nature of persons entering prison. Now a new element has been introduced, potentially imposing additional limits on their ability to plan for that demand.

The third direct policy response, diverting part of the prison demand to a different market, is reflected in the scenario on Federal aid to prison alternatives. The important point about this policy option is that the scenario makes assumptions which are at best controversial, and at worst implausible. The case study data (especially in Iowa) and existing literature[8] suggest that instead of being a replacement to prison, community corrections may expand rather than contract the net of incarceration. The scenario assumes that the Federal government will successfully ensure that subsidies will stimulate the intended type of diversion. If the policy were to be attempted, but the assumption proved false, Federal aid to prison alternatives might have no effect at all on prison populations, while fostering an unin-

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* See Figures 6.19-6.23.

Figure 6.19

FEDERAL BUREAU OF PRISONS – Dynamic Modeling Approach

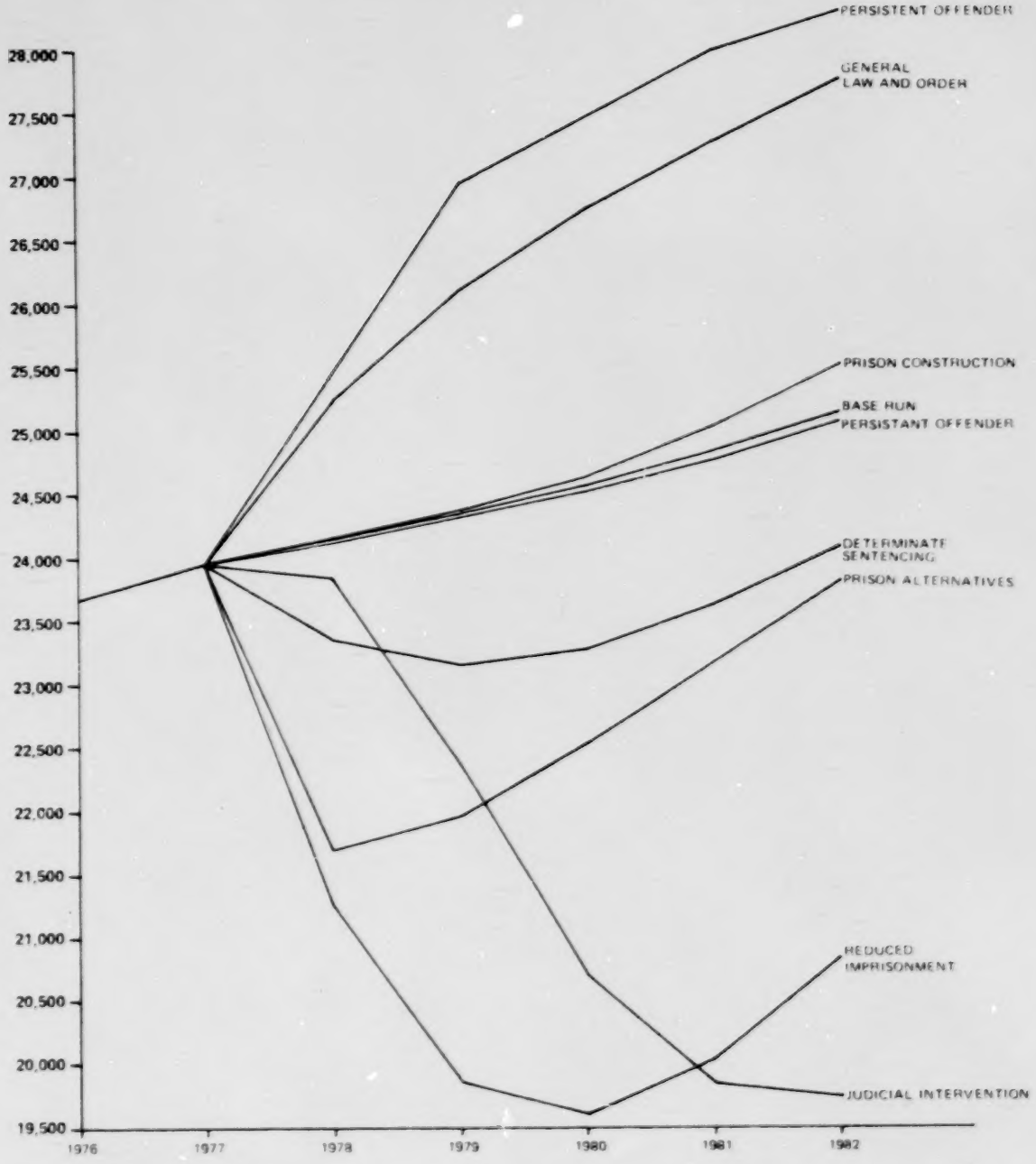


Figure 6.20

MASSACHUSETTS – Dynamic Modeling Approach

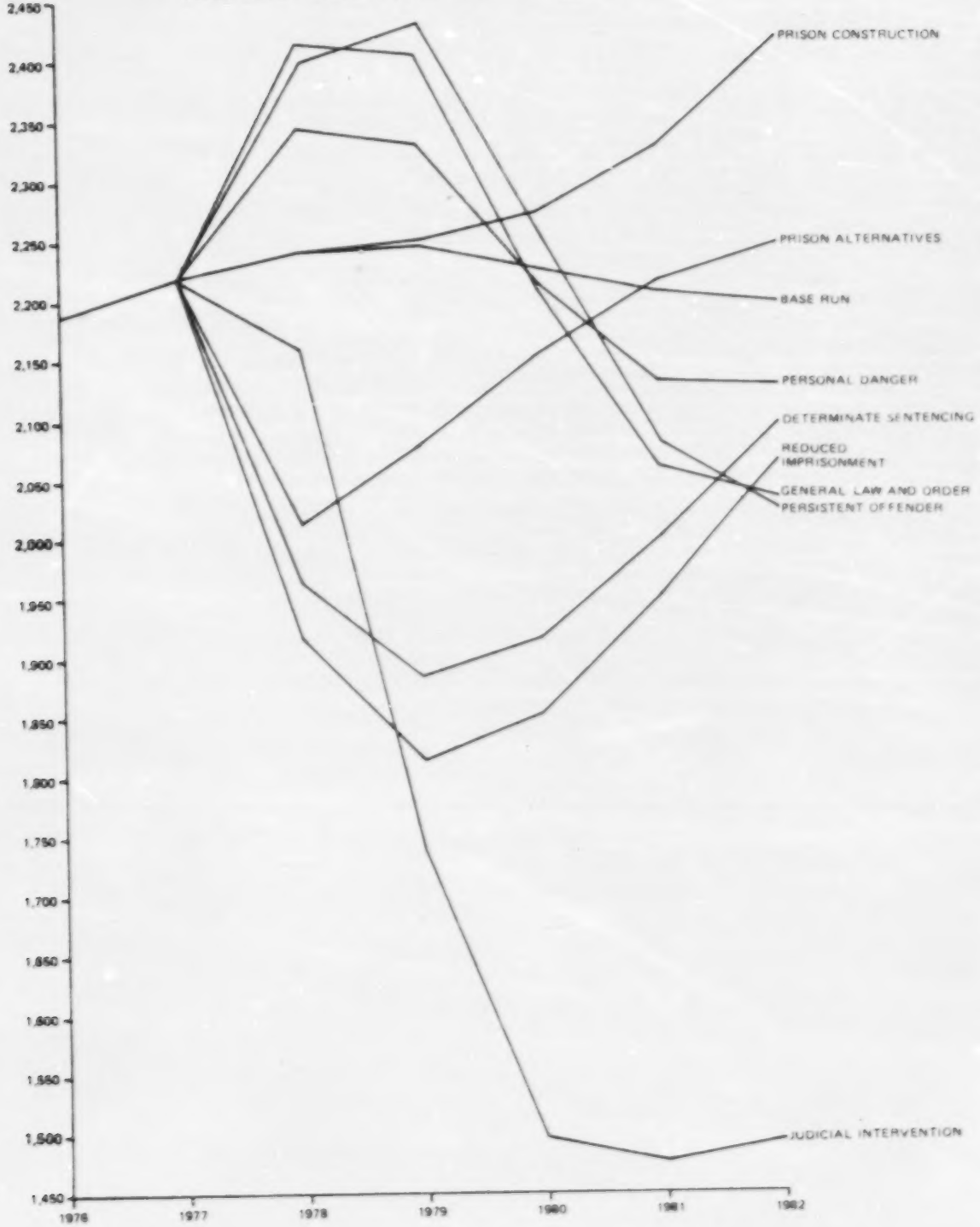


Figure 6.21

IOWA – Dynamic Modeling Approach

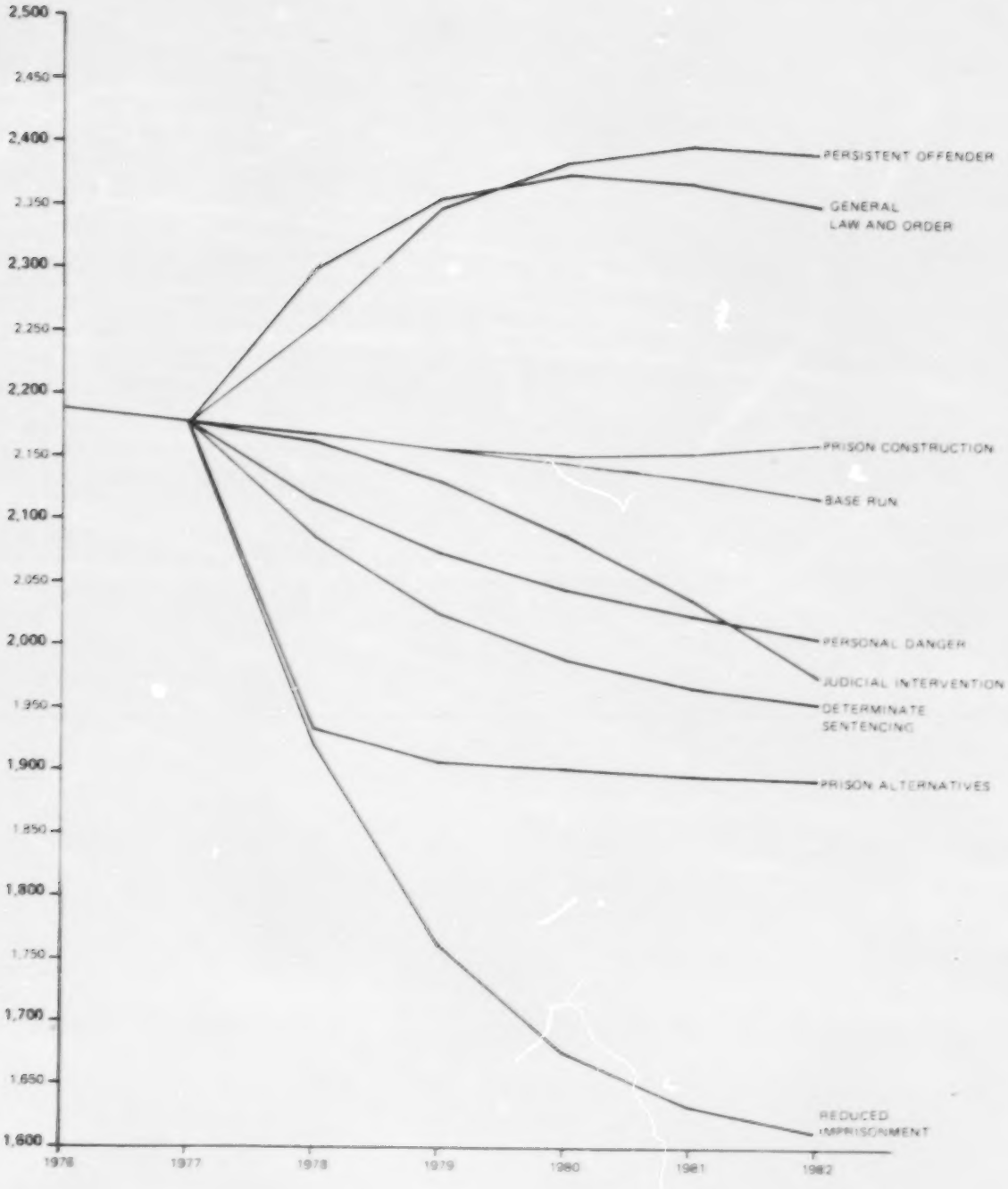


Figure 6.22

SOUTH CAROLINA – Dynamic Modeling Approach

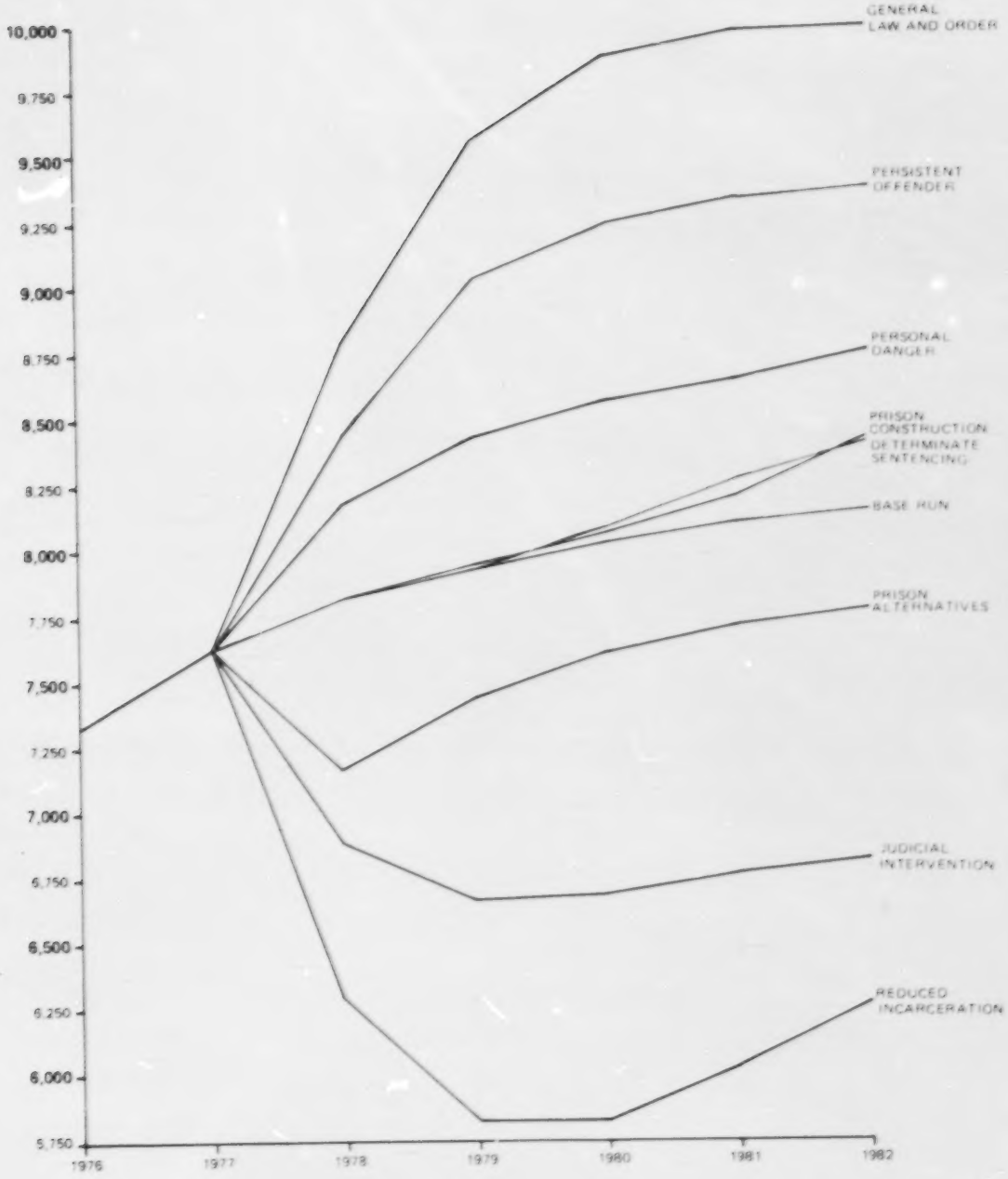
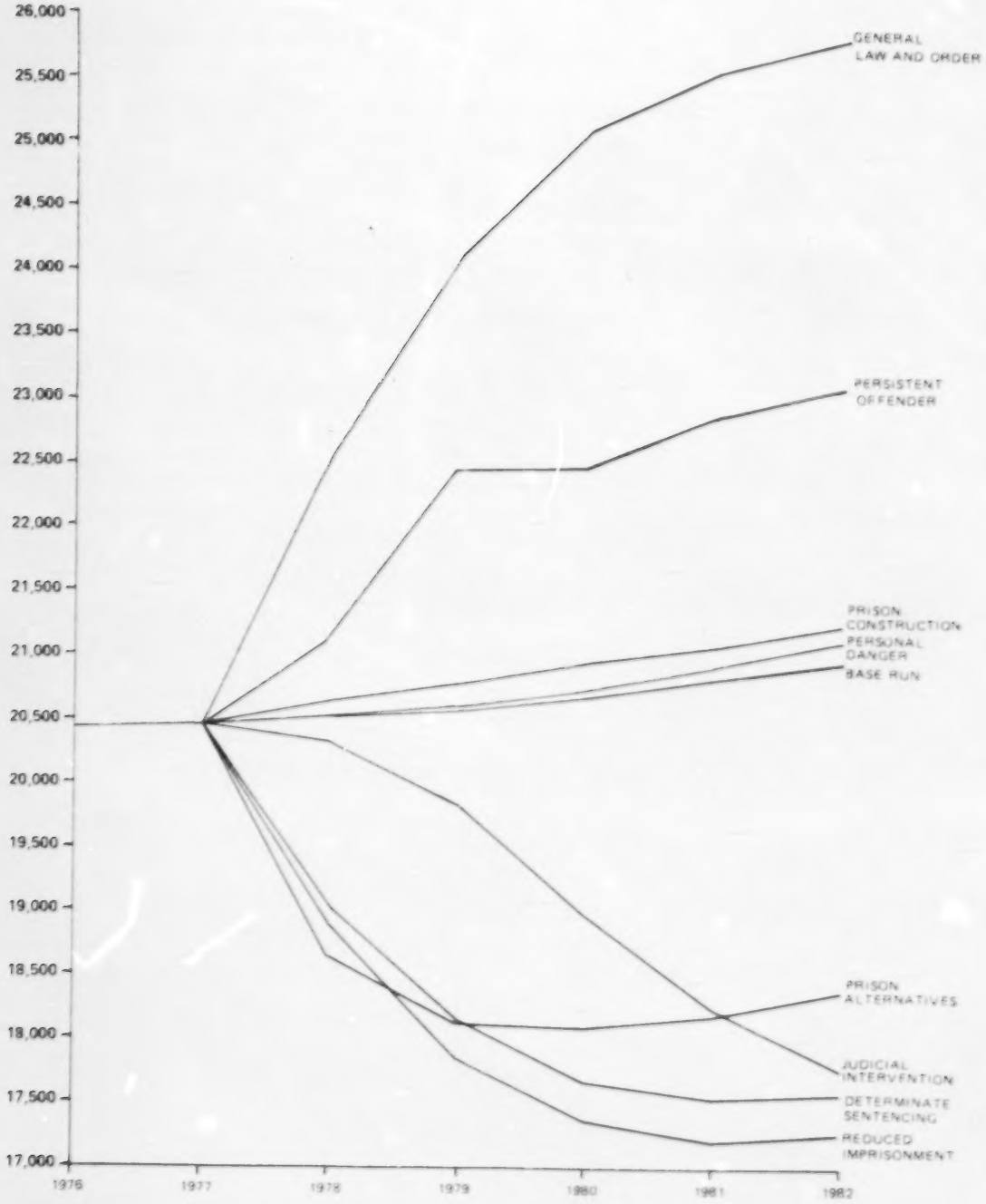


Figure 6.23

CALIFORNIA -- Dynamic Modeling Approach



tended increase in other (albeit less intrusive) forms of social control.

In the fourth "direct response" area, the central long-term issue concerning the expansion of the supply of prison capacity through construction is the synamic relation between demand and supply. William Nagel and others have provided suggestive but inconclusive evidence that the existence of the capacity itself may be creating and increasing demand, rather than matching capacity to demand. This phenomenon is well established in other areas of social life. In the short first phase of this study, however, fragmentary evidence was collected on both sides of this debate.

In our judgment, the case must be regarded as unproven, and the issue placed high on the future research agenda. An initial step has been taken in the simulation's apparent support for the notion that States can be classified according to their propensity or disinclination to build new prisons.

A related point is that pressure for the expansion of the supply of prison capacity may occur as an indirect result of policies other than those focused on prison crowding. The general law and order simulation shows, for example, that a policy seeking tougher treatment of offenders could considerably strain the correctional systems of States where crowding is already severe. Pleas for more prison space would be an almost certain result of general law and order policies in many states.

In the second class, "indirect policy effects" are the two scenarios dealing with altered priorities. Whether the emphasis is on the persistent offender or the personal-danger crime, a similar observation can be made. In States where crowding already exists, more stringent treatment for a sector of potential prison admissions cannot be made without adjustments elsewhere. In the persistent-offender scenario, for example, the longer mandated prison stays for this category would substantially reduce the fraction of inmates subject to adjustment by Parole Boards. The system would be forced to respond, either by reducing average stays for the remaining population or by implementing another change at the sentencing juncture, to avoid both the crowding and inflexibility that would otherwise result from successive entering cohorts with long stays.

Finally, the determinate sentencing simulations show the variability of the indirect effects from policies constraining the system's flexibility to grant release. In States where the legislature determines a sentence longer than the current average time served for that offense, such an innovation would effectively raise, rather than lower, the prison population level. The central lesson to be gained from the analysis and simulations above is that general statements about broad classes of policy

can be worse than misleading. In most cases, the effects of types of policies on prison populations will vary greatly across states. In one State, support for community corrections may reduce prison populations; in another, no effect may be felt at all. An emphasis on personal-danger crime may raise prison populations in one State, while declines may result in another. It must be recognized that just as there is no "national problem" in the sense that it is the same in degree and kind around the country, nor any national level model to predict what will happen, so there is no one "national solution."

VI. NOTES

1. David T. Stanley, Prisoners Among Us: The Problem of Parole (Washington, D.C.: The Brookings Institution, 1976), p. 68.

2. Ibid., p. 69.

3. National Prisoner Statistics Special Report: Census of State Correctional Facilities, 1974 Advance Report #SD-NPS-SR-1 (July, 1975), p. 6.

4. We are indebted to Professor Daniel Nagin for this observation.

5. Pugh v. Locke, 406 F. Supp. 318 (M.D. Ala. 1976).

6. Communication from A.J. Bronstein, Executive Director, National Prison Project of the American Civil Liberties Union (July, 1977).

7. See, U.S. General Accounting Office, Federal Guidance Needed if Halfway Houses Are to Be a Viable Alternative to Prison (May, 1975).

8. See especially Paul Lerman, Community Treatment and Social Control (Chicago: University of Chicago Press, 1975).

VII. POLICY ISSUES FOR FEDERAL AND STATE GOVERNMENTS

Federal Government Issues

Our Phase I effort demonstrates with some force that there exists in the United States today no national policy with respect to prisons; their population and standards of operation. States experience crime, respond, sentence and imprison differently. There is a predictable inevitability to such a picture given our system of Federalism. Yet, a series of policy issues will just as inevitably arise as Congress struggles with the question concerning the role of the Federal government with regard to the present prison population crisis many States and the Federal system itself are experiencing. Since it is quite likely that the Congress will be deliberating a Federal role in relation to the present prison situation, the following section raises some Federal issues. For Congress to play an effective role it will require knowledge as to how State systems respond to its initiatives, and knowledge of the nature of the interrelationships between Federal and State corrections policy making. Thus, in the final section of the chapter, a number of State policy issues are raised.*

What is an Appropriate Prison Population Size?

The question might be posed as to what is the appropriate prison population size for any jurisdiction? The data simply show high variations across States, and substantial variation over time. Prison populations do not closely follow crime rates nor the State

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* Given the scope of Phase I of the study, issues pertaining to local government and corrections are not reviewed here.

populations at risk. Can the Federal government place itself in the position of mandating or even suggesting to the States (and its own system) what the prison population should be in the future even if it developed a highly sophisticated standard-setting agency and appropriate consultative technical assistance to the prison systems? Should the Federal government attempt to set policy of this kind?*

The Elusive Concept of Adequacy

At present there is no accepted and shared standard of adequacy in prison structure and living conditions. Some minimum standards, of a sort, which have implications for prison population size, are already emerging from Federal intervention through the agency of Federal district courts. We are still left with the question of the propriety of the Federal government setting standards of adequacy for the nation which its own Federal Bureau of Prisons might not be able to meet.

Whatever standards Congress might set, the Congressionally mandated standard of adequacy by statute (or one which is promulgated through a legislatively created standard setting agency) would probably be used as the minimal standard in future Federal court actions. One might anticipate a sharp rise in prison litigation following the promulgation of such a standard.

Other standards Congress might set, such as one man to a cell or a minimum number of hours a prisoner must be permitted to spend outside of his or her cell, would have enormous impact on construction costs for cell and/or program space. Yet, in the absence of commonly agreed upon standards the States and Federal courts will continue to set their own often disparate standards.

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* To some degree the Federal government has attempted to do this with regard to juvenile offenders. See, Juvenile Justice and Delinquency Prevention Act of 1974.

Problems of Federal Aid Capacity Criteria

If Federal aid to prison construction is apportioned on a "need" basis, the formula for funding will be crucial to the impact of the Federal program. If need is defined solely in terms of prison overcrowding, those States which have done a relatively poor job of attempting to control prison populations will receive a large portion of Federal money, perhaps to continue the policies that have inflated the prison population. Under such a program, States which have conscientiously attempted to control prison populations will be at a relative disadvantage.

If, on the other hand, funds are denied States which do not meet Federal standards, those States which have conscientiously attempted to limit growth in prison populations will receive a larger share of Federal funding; but the choice between State and Federal definitions of correctional needs would raise an intractable dilemma of punishing inmates or rewarding systems that have not controlled population. If a State's definition of who should go to prison governs the pattern of Federal funding, those states which now imprison more will be rewarded for such policies in the form of Federal monies. If the Federal definition of need or requirement of conscientious efforts at population control are integral parts of a Federal aid policy, the "best effort" States will benefit, but the most disadvantaged prisoners in the most overcrowded facilities will suffer.

Problems of Federal Aid Adequacy Criteria

The trade-off between States and prisoners discussed above reappears ith equal force in considering Federal assistance to bring prisons up to minimum standards of adequacy. If Federal aid initiatives provide only for acceptable institutional conditions in new facility construction, the States can compete on an equal footing for new construction assistance. In contrast, if system-wide adequacy is a precondition to Federal assistance, those States that have conscientiously attempted to provide adequate facilities will find themselves in a relatively advantageous position in the allocation of Federal funds. The choice, again, is between States and prisoners: requiring system-wide prison adequacy as a precondition to Federal funding rewards those States that have made a conscientious effort to provide decent prison conditions; such a policy simultaneously deprives inmates in the "worst case" States of the funding advantage that would accrue if massive reforms were not required of the most shameful correcitonal systems now existing in the Unite States.

Capacity vs. Adequacy

In an environment of scarce resources one can expect that capacity and adequacy problems will not be resolved easily. These two needs are likely to compete for Federal aid rather than complement each other. In a system of Federalism and in the absence of shared standards and values about capacity or adequacy, trade-offs will have to be considered. Some States will insist on capacity relief while others may seek minimally decent housing for their highest custody population. The two agendas will be competing for Federal funding, in a setting where both needs are great and each demand operates to the detriment of the other.

A question will also arise as to new construction which may be designated as replacement space. History is a discouraging guide in this area. Beds "replaced" have, in the past, either simply been added to State's inventory or been regained after a short phase-out period.

The crucial issue is whether the Federal government will insist on the replacement of obsolete facilities as the price of Federal construction aid or focus on the need to expand prison capacity without regard to the adequacy of present facilities.

Federal Aid to Alternatives to Prisons

If Federal aid is confined solely to prison construction, Federal incentives will be concentrated on one of many post-conviction alternatives; and the effect on the criminal justice system will be distorted. Thus, the consideration of Federal aid to prison construction or maintenance necessarily leads to a consideration of balancing Federal initiatives by assisting State efforts and providing alternatives to present prison incarceration. A balanced program of supporting both alternatives in prison space appears to be the only mechanism available to insure that Federal intervention does not distort the incentive structure of State criminal justice decision-making.

State Level Policy

The primary responsibility for prison administration in the United States rests with State governments. Because States have constitutional responsibilities to maintain minimum standards, the Federal Courts have, in a growing number of instances, had to intervene in prison administration, largely on the basis of the Eighth Amendment. The funding of State corrections, especially in the area of capital expenditure, is largely met by State resources. Corrections

traditionally has had little visibility as a branch of State government, and low priority with regard to funding. The following issues are among those which are likely to be especially visible in the next few years. Although local corrections issues are not considered here, it should be emphasized that many of the important factors which determine State prison populations are locally controlled. Most of the criminal justice process prior to prison intake is not part of the centralized State government structure. A critical and perhaps unresolvable issue is that many of the policies which drive prison population are not easily subject to State control. In particular, those policies which largely determine prison intake are for the most part locally controlled. Given the crucial impact which these intake policies, especially in recent years, have on prison population, a full understanding of the interrelationships between State and local government becomes very important.

Expansion versus Prison Population Control

The essential issue here is whether each State should design a comprehensive policy, as to what ought to constitute an appropriate prison population. Expansion or control policies are, in many jurisdictions, the only feasible alternative to correctional crowding pressures.* Such a policy would provide the framework for decisions concerning expansion or control; and would shape the relationship between centralized State officials and agencies, and their opposite numbers in local jurisdictions. A large number of factors would need to be taken into account in developing this policy, including the high financial costs associated with prison construction, especially high if minimum standards are implemented in new institutional architecture and operations. This comprehensive policymaking might take into account the development of intermediate sanctions located between probation and imprisonment; furthermore, it might include decisions concerning such matters as centralization of probation services which impact on sentencing practice. Criminal code revision and new sentencing legislation is clearly important; as are less direct measures, such as court reform, which are likely to impact on prison intake.

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* Mississippi is undertaking rigorous population control and some building; South Carolina, on the other hand, appears to be interested in some population control but is also emphasizing prison construction to a much larger extent. (See Chapter II).

Design Considerations in New Construction

Given the frequent but unpredictable fluctuations in prison population size, the need for new facilities may prove temporary. When a State decides on construction, the issue then becomes whether it should emphasize low rather than maximum security and be of a multipurpose design. This is a critical issue because the replacement need appears greatest for the oldest, largest, and most secure prisons. While it may appear attractive for a State to seek Federal aid to replace maximum security facilities with maximum security facilities, States may want to consider alternatives. Maximum custody prisons built today have a physical plant life expectancy of a least a century. Furthermore, maximum custody facilities are not suitable for multipurpose use at a time of prison population decline. There is a difficult trade-off: the more a prison emphasizes security, the less likely it can be used for other purposes.

State Standard Setting and Implementation

As discussed above with regard to the Federal government, States have the problem of which considerations to take into account in determining standards of adequacy and capacity. Some complex issues arise with regard to State initiatives in standard setting and whether such efforts impede or encourage intervention in prison matters by the courts. Without State standards the initiative may pass to the courts. However, the very presence of standards and goals emanating from State government may encourage litigation and enforcement by the courts.

Many difficulties, of course, arise in attempts to implement standards, both agency standards and court orders. Responsibility for implementation of standards poses additional strains on the resources of both State agencies and the courts. Standard setters usually have budgets only to set standards; whereas departments of corrections must house, feed and supervise prisoners with fixed budgets and less optimistic views of achievable objectives. The dialectic process between aspiration and fiscally achievable minimum standards appears to be one of the crucial predictable areas of conflict between 1977-1982.

States may often have standard setting and enforcement responsibilities with regard to locally controlled corrections. Such standards often serve to structure the State-local government fiscal relationship, as is the case with State Subsidy programs which have the purpose of encouraging local government to take more responsibility for corrections administration; and thereby, reduce commitments to State correctional facilities.

Interjurisdictional Prison Facility Sharing

This study's findings suggest that the sharing of vacant cells by an overcrowded jurisdiction will provide little to no relief, since overcrowding is a regional phenomenon in male adult facilities. Adult male correctional facilities tend to follow a regional pattern that renders the concept of interjurisdictional capacity sharing highly vulnerable in those jurisdictions where the most severe overcrowding has already occurred. Furthermore, the transportation of prisoners beyond regions poses major fiscal and human rights difficulties. The policy implications may, however, be different with regard to women prisoners where transfers to a neighboring State may be possible without imposing additional distance between the prisoner and her home.

Recidivism and Prison Population

Not only have more prisoners come during the last four years than ever before, but more will be coming out during the next three years than in any recent period in American history. To the extent that prior prison time historically predicts future imprisonment if an individual is reinvolved with the criminal justice system, the States may even face a second generation of population pressure which is directly responsive to the imprisonment patterns of the last four years. If this occurs, imprisonment problems that will occur in the next few years are the legacy of policy choices that have occurred in the preceding time interval.

Concluding Reflections

Finally, it should be noted that State and Federal policy issues are closely interrelated. Of critical importance is the nature of the response by State government to the Federal aid possibilities

outlined above. Many difficult issues are involved in such a situation and are likely to be a matter of continual negotiation and modification. The underlying issues, about which considerable disagreement exists, is whether or not there should be, even in the broadest of terms, a national policy on prison population. At this preliminary stage of the study, it is premature to make a conclusive judgment. While it is clear that there is no single national problem or situation, this is not necessarily inconsistent with there being need for a national policy on imprisonment. Most of the jurisdictions in the United States face prison problems of different degrees, for different reasons and of different kinds. The unifying characteristic is that most jurisdictions are in trouble.

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* U. S. GOVERNMENT PRINTING OFFICE : 1977 260-992/4031